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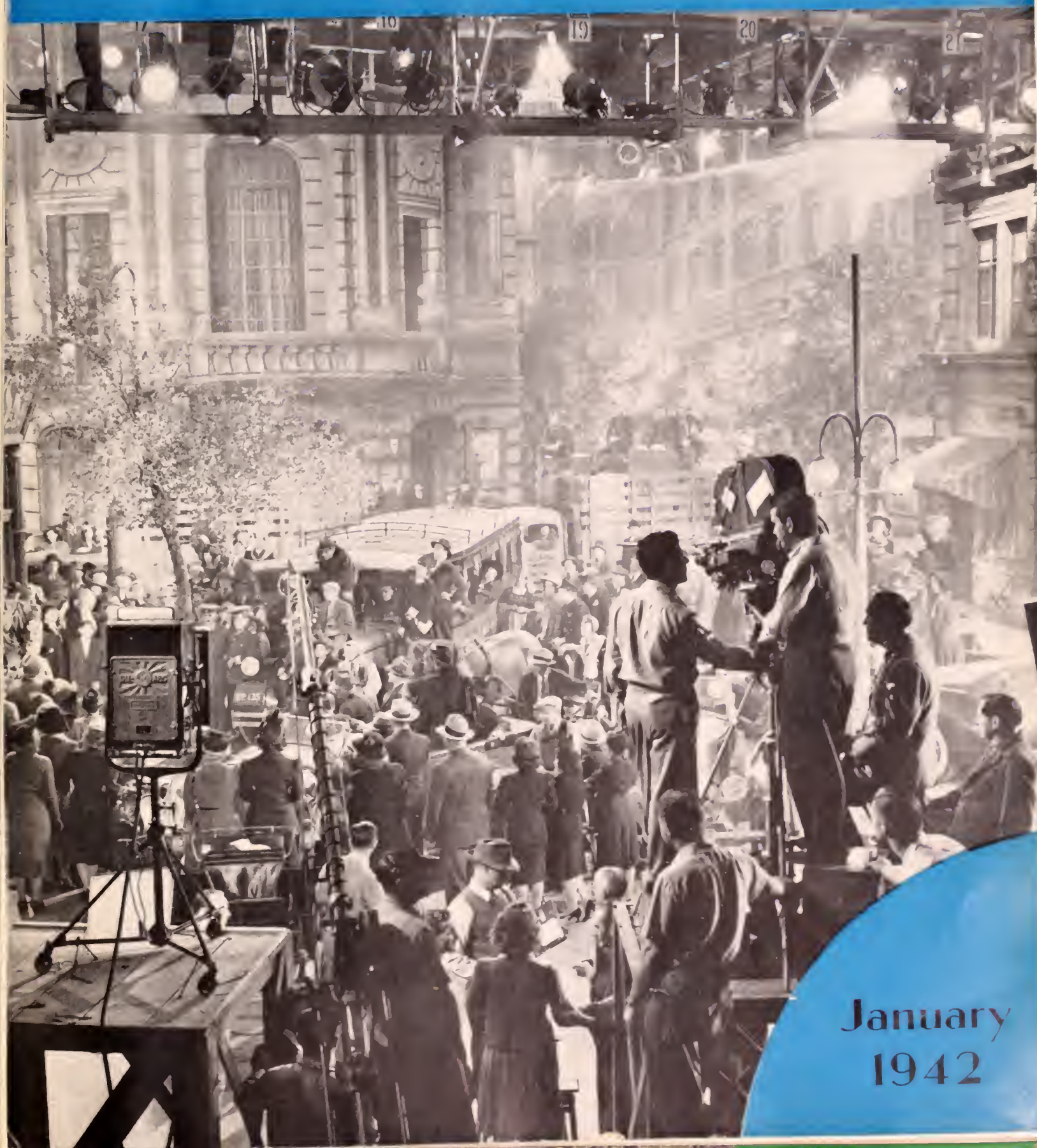




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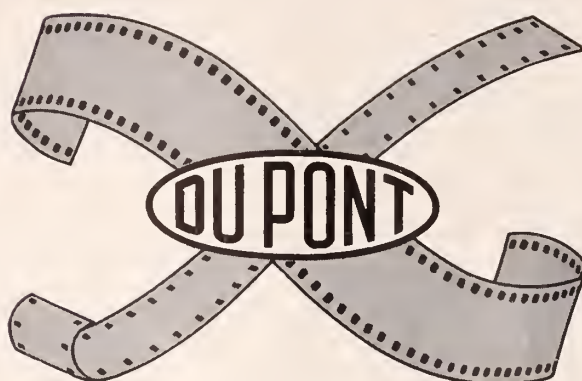
# THE AMERICAN *inematographer*

★ THE MOTION PICTURE CAMERA MAGAZINE ★



January  
1942





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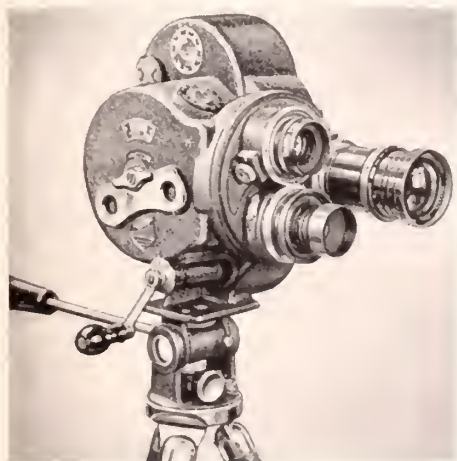


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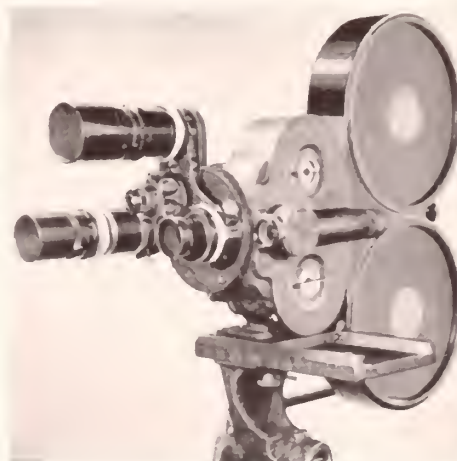
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# AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 23

JANUARY, 1942

NO. 1

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## The Front Cover

This month's cover shows Director of Photography Rudy Maté, A.S.C. (second from right on parallel) and Director Ernst Lubitsch filming a scene for Alexander Korda's "To Be Or Not To Be." The set—an exact replica of a square in Warsaw—was constructed indoors on a sound-stage. Still by Robert Coburn.



# Birthday Of The A.S.C.

By FRED W. JACKMAN

President, American Society of Cinematographers.

THIS month marks the birthday of the A.S.C. Twenty-three years ago, in 1919, a handful of cameramen formed an organization they called the American Society of Cinematographers. It was based very simply on an ideal: a sincere conviction that cinematography was a great and dignified profession, and that not only the cinematographers themselves, but the industry, needed an organization of cinematographers, operated solely by cinematographers, for cinematographers. Its purpose was not merely to set up economic standards for the men who had charge of photographing the industry's pictures, but to establish and maintain standards of professional and technical skill and integrity, and to bring into closer personal and professional fellowship all of the leaders of the motion picture camera profession in the same way the Medical Associations bring doctors together, and the Bar Association unites lawyers.

During the twenty-three years since the A.S.C. was founded, many changes have come to the industry, its people, and the conditions under which pictures are made. The A.S.C. has kept pace with the industry, growing and changing to meet each new change of conditions. Today, the American Society of Cinematographers is the oldest organized group of any sort within the motion picture industry, and one of the most respected. The original handful of members has grown to include every Director of Photography of recognized standing in the major studio world.

But in one thing, it has not changed. It is still dedicated to the same ideals of service to the camera profession and to the industry, to which its founders dedicated it twenty-three years ago. Its activities, now as in 1919, have provided constantly-advancing standards for the economic and professional welfare of its members. Its record of service to the industry is unequalled. Collectively and individually, the A.S.C. and its members have participated actively in every phototechnical and artistic advancement the industry has made in more than two decades. A list of the basic patents on equipment and methods held by members of the A.S.C. would embrace almost every phase of modern film technique, and would be impressively long. It would become even more impressive if it could include the informal contributions freely made by the Society and its members to the evolution and refinement of commercially manufactured equipment and materials. There is hardly anything used today in the production of motion pictures which does not bear some trace of these contributions of the A.S.C.

# American Society OF Cinematographers

Los Angeles, California

*The following are the Charter Members of the American Society of Cinematographers as incorporated under the Laws of the State of California, the eighth day of January, Nineteen Hundred and Nineteen.*

Philip E. Rosen

Homer A. Scott

William C. Foster

L. D. Clawson

Eugene Gaudio

Walter L. Griffin

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Charles E. Rosher

Victor Milner

Joe August

Arthur Edson

Fred LeRoy Granville

J. D. Jennings

Robert S. Newhard

L. Guy Wilky

The original of this scroll, commemorating the founding of the A. S. C., hangs in the library of the A. S. C. Clubhouse.

No other group has left a more imperishable imprint on the cinema and on the methods, materials and equipment through which cinematic entertainment is brought to the screen.

When the A.S.C. was founded, America was just emerging from a world war. During these last twelve months, we have seen the Nation coming closer and closer to another and greater world war, and finally being forced into active participation. In this, too, the A.S.C. and its members are playing their active part. Many members have participated in the production of training films for our armed forces. Others have given up profitable positions to put on the uniforms of the photographic sections of the Army and Navy. Men who were in uniform twenty-five years ago are in uniform again, volunteering their skilled services to their country. Yet others have given the products of their inven-

tive brains to the development of military devices which cannot be described until the need for wartime secrecy is past. Those who remain at home are contributing whole-heartedly to the industry's vital contribution to the War Effort—making better films to help uphold the morale of the Nation and its allies.

So as the A.S.C. reaches its twenty-third birthday, we can look back with satisfaction on twenty-three years during which the A.S.C. has kept pace with the industry, and maintained its ideal of service to the camera profession and to the industry. We face the future with a pledge that that ideal will continue to be the governing principle of the Society, and that, come what may, the A.S.C. is big enough and mature enough to change with the changing times, keeping its place as a leader of the industry's progress. END.



# TECHNICAL



Roofed-in sets and extreme focal depth were among the outstanding trends of 1941, as shown in this still from "Citizen Kane."

**T**HE year 1941 might in many ways be chronicled as an "average" year in so far as technical progress in the motion picture industry is concerned. Certainly there have been no spectacularly sensational technical innovations to compare with the advent of sound, the coming of panchromatic film or the introduction of the first modern super-speed emulsions. Yet when one looks backward over the actual technical advances in methods, materials and equipment that can be recorded for the year, the conclusion cannot be escaped that 1941 was a genuinely fruitful year in cinematic technology.

## Methods

Without doubt the most immediately noticeable trend in cinematographic methods during the year was the trend toward crisper definition and increased depth of field. Pioneered by Gregg Toland, A.S.C., in Orson Welles' "Citizen Kane," and extensively publicized as the "pan-focus" technique, this technique has been followed in other pictures by other cinematographers and studios. What is more significant, it appears to be a definite part of the trend, more extensively used both before and since the release of Toland's film, toward increased definition and realism, and strongly away from the softer style of photography popular a few years ago. It depends essentially upon minimized diffusion and the use of more strongly directional lighting and reduced lens-apertures—in some instances ranging from  $f:5.6$  to as low as  $f:11$  or  $f:16$ .

Of importance second only to this—and in the long run, of probably greater actual significance—has been the industry's increasing use of 16mm. Several major studios have made extensive use of silent 16mm., both black-and-white and Kodachrome, for pre-production tests, location-scouting, and the like in place of 35mm., especially in the instance of Technicolor productions, and found it productive of worthwhile savings of time, trouble and expense. In

at least one instance, a major producer has successfully used 16mm. sound-tests as a means of selecting the leading players for an important production.

Three color-film laboratories—Technicolor, Cinecolor and Hollywood Color Film Co. (Gaspacolor)—have announced that they are commercially enlarging 16mm. Kodachrome to 35mm. three- and two-color film. The short-subjects department of one major studio (Warner Bros.) has produced several 16mm. short-subjects for 35mm. Technicolor release.

At the same time, the 16mm. nickel-in-the-slot "soundies" so hopefully announced a year ago have lagged, due in part at least to difficulties in obtaining equipment and possibly to apathetic public response.

The Defense program has necessarily curtailed the manufacture of equipment of all types, both professional and amateur, as supplies of raw materials for civilian use have been restricted, and the specialized skill of the manufacturing plants has been redirected to the production of essential war materials.

The Defense program has born fruit in another field, however, with the industry's active participation in the production of training films for the Armed Services. With the greatest producers, directors, writers, cinematographers and technicians in the industry, and the studio facilities of the entire industry to call upon, a virtual revolution in the production of educational films has taken place which, in the opinion of educators who have viewed some of the many Army films already made, will advance the technique of educational films and visual education in general by twenty-five years.

In Russia, the Soviet inventor S. Ivanov announced the development of a system of stereoscopic cinematography involving the use of a beam-splitting mirror system on camera and projector to produce and reproduce the essential binocular images, and a special wire

grille in front of the screen to assure proper selectivity by the eyes of the audience.

## Film—Professional

There was no innovation in the field of 35mm. negative emulsions. However, there was something of a trend on the part of several of the industry's leading cinematographers to make use of super-speed emulsions such as Super-XX on normal production interiors. In some instances, as in Toland's "pan-focus" technique, this was done to minimize the lighting problems incident to stopping down for extreme focal depth. In others, it was done because the cinematographer involved preferred the flatter gradational characteristics of these emulsions to the somewhat greater contrast of more "normal" emulsions. In the first case, full normal development was usually given, while in the latter case, developing-time was somewhat shortened in the interest of grain-quality. It seemed evident, however, that—especially when fine-grain prints are used—the faster emulsion still does not give objectionably large grain.

Several laboratories changed over completely to the use of fine-grain positive emulsions for all printing, both daily and release, and to the use of fine-grain recording positive for recording and re-recording purposes.

## Film—Amateur

There was very little change in the substandard emulsions. Agfa-Ansco, late in the year, introduced a double-run 8mm. reversal emulsion of unprecedented speed and surprisingly good quality, rated at Weston 100 to daylight, and Weston 64 to artificial light. The same firm also introduced a 16mm. recording stock of improved fine-grain quality and resolving power.

## Color

Without doubt the outstanding development in this field was the announcement that 16mm. Kodachrome can now be successfully enlarged to 35mm. Technicolor. This development is almost certain to have a far-reaching influence on the production of theatrical short-subjects and independent features, as well as commercial and educational pictures.

The Gaspacolor process, well known in Europe for some years, finally reached the American market as a three-color and two-color printing method for both 35mm. and 16mm.

Cinecolor's three-color system appeared very near commercial utilization, and the firm actively entered the field of making two- and three-color enlargements from 16mm., and also the field of making 8mm. reduction-prints in color from 35mm.

New kodachrome emulsions designed especially for duping, greatly improved



# PROGRESS IN 1941

the quality possible in 16mm. kodachrome dupes.

In the still field, Eastman announced two services for making enlarged paper prints in color from Kodachrome originals. Trade-named respectively "Minicolor" (for enlarged prints from 35mm. originals) and "Kotavachrome" (from the larger-sized professional Kodachrome transparencies) these somewhat similar processes appear to make use of a special cellulose base coated with a monopack type of emulsion.

## 35mm. Professional Cameras

There were no startling innovations in the field of 35mm. professional cameras, due probably in a large measure to the requirements of the Defense Program, which restricted raw materials and turned the output of the camera factories into other channels. The Twentieth Century Camera, evolved by Twentieth Century-Fox and manufactured by Cine-Simplex, went into manufacture, but in limited quantities, and it appears the commercial introduction of this camera will not take place until after the war's end.

## 16mm. Professional Cameras

The long-rumored Bell & Howell professional 16mm. camera finally made its how as a remarkably excellent studio-type camera for the highest type of professional use. It was optionally equipped with a miniature of the famous Bell & Howell Type I registering pilot-pin movement, and every professional convenience. The further exploitation of this development, however, appears to be another that is sidetracked "for duration" by the War Effort.

## 16mm. and 8mm. Amateur Cameras

The same considerations which have slowed developments in the professional camera field have exercised a similar retarding influence on new developments in amateur cameras. However one new 16mm. camera—the Victor "Aircraft" model—appeared; substantially the time-proven Victor design with a greatly-improved governor mechanism. Several new double-run 8mm. cameras appeared, however. Among them are the Cine-Perfex Magazine-type camera for use with the Eastman double-8 magazine-film, and the Univex "Cinemaster" Duo-8, designed for use with both Univex single-run 8mm. film and standard double-run 8mm. black-and-white and color film.

## Lighting

The chief trends in lighting were two. One was toward an increased use of arc-lighting in monochrome cinematography, not only for illuminating the extremely large, stage-built exterior sets which came increasingly into use, but also for more normal scenes, to bring out textural values and to permit the use of smaller apertures as demanded by the increased-depth technique.

The second trend was toward the use

Increased use of 16mm. for professional purposes, and the successful enlarging of 16mm. Kodachrome to 35mm. Technicolor were among the most significant developments of 1941.



of properly-corrected incandescent lighting for Technicolor photography, making use of the greater compactness of the Mazda lighting units, and their ability to burn in virtually any position.

The use of smaller lighting-units, such as the "Dinky Inkie" and the Bardwell-McAlister "Single Broad" increased. Some cinematographers developed special lamps for mounting directly on their cameras for use in front-lighting close shots and follow-shots.

## Lenses

The use of "coated" lenses met with a varied reception. Some studios turned definitely away from them. Others—notably 20th Century-Fox—turned as strongly toward them. The latter is equipping all their new cameras with coated lenses, and having existing lenses coated, as well. In addition to Bausch & Lomb, which is coating their new "Baltar" objectives, at least three firms are now coating existing lenses commercially. These are the Vard Mechanical Works, in California, the National Research Corp., in Boston, and the Photophone Division of RCA.

The Eastman Kodak Company announced a new lens for still camera work, known as the Kodak Ektar, the interior surfaces of which are coated, though the outer surfaces are not. The same firm also announced the development of a radically improved type of optical glass which, however, will not be available commercially "for duration."

Several studios and individuals have conducted investigations of the relative transmission capacities of lenses, with the result that work is under way leading to improved methods of calibrating photographic objectives in a manner which will express the actual transmitting power of the lens involved,

rather than an arbitrary mathematical formula.

## Accessories—Professional

During the past year, the industry finally reached the point where its acceptance of the photoelectric light-meter might be said to be virtually 100% complete. This may be attributed in part to the increasing number of "production" cinematographers assigned to Technicolor features, thus coming in contact with the color firm's accurate use of meters, and to the development of advanced types of meters.

Clyde De Vinna, A.S.C., and Joseph Ruttenberg, A.S.C., developed a useful accessory by adapting the well-known S.V.E. "Picturol" 35mm. slide-film projector as a means of viewing light-tests on the set, by projected light.

Charles G. Clarke, A.S.C., at 20th Century-Fox, developed a very useful device by which a suitable photographic transparency is suspended in front of the lens and permits the insertion of actual clouds into an otherwise cloudless sky. Similar devices are being developed in several other studios.

At the Warner Brothers Studio, an unusually compact and flexible lighting control switchboard has been developed. Built in the form of a mobile control panel, the device incorporates several dimming rheostats of high and low capacity, together with the necessary ballast resistances, switches, indicating-lights, etc., so that a large number of lights on a set may be separately controlled by a single operator, and dimmed either individually or together.

At the Samuel Goldwyn Studio, Gregg Toland, A.S.C., developed a method for dimming arc-lamps by controlling the

(Continued on Page 45)





Left, Fig. 7, filmed conventionally. Right, Fig. 8, filmed by IR System.

# Increasing Focal Depth With The IR System

By ALFRED N. GOLDSMITH

Past-President, Society of Motion Picture Engineers

IT is correctly axiomatic among optical experts that the depth of field of a lens is a function only of the focal length of the lens and its working or relative aperture (together with the permissible diameter of the "circle of confusion" forming the image of a point source). Thus, for a lens of any specific focal length and aperture or "speed"), focused for a definite object distance, and for a given permissible size of the circle of confusion of the point image, the depth of field is readily calculable and is unchangeable by any known method.

This is a serious and inevitable limitation of all lens systems, and naturally has a profound influence on optical imagery in the motion picture field. Further, it influences and indeed controls the method of studio photography, script writing, separation of and relationship between various takes, editing, cutting, and the final effect of the produced picture.

It has required the cameraman as well as the writer, director, actor, and editor to accommodate themselves to the rigid framework of a cramping optical law. Sincere tribute must be paid to the effort and ingenuity of these workers in their attempt to circumvent or at least to minimize the difficulties of photography within these restrictions.

But, at best, an artificially limited

presentation has resulted, including a number of conventions which have been accepted by the producers and the audience alike in the absence of anything better.

Sometimes, indeed, cameramen have resorted more or less in desperation to radical measures such as using extremely short-focus lenses stopped far down in order to secure somewhat increased depth of field. In so doing, they have inevitably introduced the exaggerated perspective and pictorial unnaturalness resulting from the use of such lenses, and have either over-illuminated the stage with resulting eyestrain and discomfort to the actors or have produced a contrasty, underexposed, "chalk and coal" picture or both.

On the other hand, the human eye has in effect a practically unlimited depth of field. The re-focusing of the eye for any desired object distance is so nearly instantaneous that the viewer is unaware that any part of the field of view is ever out of focus. Thus, in natural and real life, persons with normal sight are totally unaware of any limitation in the visual depth of field. Again, anyone who, in viewing a legitimate stage performance, found that he could see the people in the foreground sharply defined but that the people in the background were blurred or fuzzy, would at once and properly consult his oculist.

The follow-focus adjustment is of course no solution of the problem since it applies only to one given object distance at any instant and does not in the least solve the major pictorial and dramatic problem of successfully depicting significant action occurring *simultaneously* at widely different distances from the camera.

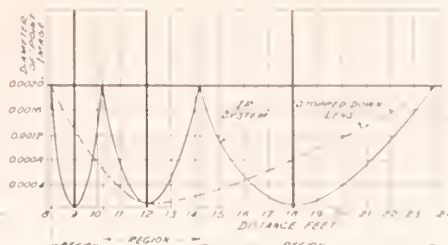
It is necessary to stress here the preceding points since many studio workers have become so accustomed to present-day practice that its limitations have come to be regarded as inevitable, natural, and inherently to be accepted. Indeed, present motion picture technique is fundamentally based on these optical limitations of the objective lens. Studio practice simply does its best within the limits of present-day optics. Some cameramen and a part of the audiences have become so accustomed to the present restrictions that they hardly realize the wealth of improvement which would be available were these restrictions to be removed. It does not occur to most people that the present abrupt succession of long, medium, and close-up shots necessarily results in large measure from the limitations of the lens. Present practice requires continually shifting the point of view, wearisomely accumulating many takes of each scene or action, painstakingly matching up successive takes, "covering up" in cutting and editing, delay and increased cost in production, unnaturalness in the acting and in the corresponding effect on the audiences, and a less economic and dramatic set-up than would otherwise be attainable.

The availability of increased depth of field would gradually bring about a marked revolutionary change in methods of production, greater flexibility, considerable economies, and simplifications in camera technique. To the audience, the pictures would more closely resemble legitimate-stage performances or even real life.

In view of the confusion which has existed in some quarters as to what constitutes a system for true increase in depth of field, it is deemed appropriate to list below the specifications and general characteristics of such a system. The following description then covers an acceptable method for adding to depth of field without optical or esthetic deterioration of the picture rather than a system which merely sacrifices important optical or pictorial qualities to secure an apparent increase in depth of field. The following are, however, admittedly strict specifications.

During the past year, the problem of obtaining increased depth of field has received considerable attention. One of the latest and most interesting developments is the "Increased Range" system originated by Dr. Goldsmith and his associates, and covered by U. S. Patents No. 2,244,687 and 2,244,688. We are proud to present herewith the inventor's description of the process, as abstracted from a paper presented by him at the Fall, 1941, Convention of the Society of Motion Picture Engineers. The paper in full appears in the January, 1942, issue of the Journal of the S. M. P. E.





Left, Fig. 1, principles of IR System; Center, Fig. 2, comparison between depth in IR System and stopped-down lens; Right, Fig. 3, lighting and definition regions in typical IR System set-up.

- (a) The system shall be usable for either black-and-white or color pictures.
- (b) It shall be usable for still-picture or motion-picture photography.
- (c) It shall be usable for photography or for television and the like.
- (d) The system shall enable using standard lenses of the highest degree of correction of optical aberrations then current in the art.
- (e) It shall enable using lenses of any normal and usual focal lengths.
- (f) It shall enable the use of normal lenses at the usual large apertures.
- (g) And above all, there shall be no deterioration of picture quality or sharpness as the result of the use of the system.
- (h) The sharpness of focus of objects in any portion of the object space shall be reasonably controllable. This condition, which is preferred but not mandatory, is met by the IR System.
- (i) No extensive or unduly cumbersome changes in camera construction shall be necessary.
- (j) The handling of the camera and its finder shall be essentially conventional; and increased-range pictures shall be available in the finder to guide the cameraman as well.
- (k) It shall require no more total light on the actors than for ordinary photography.
- (l) It shall enable the use of lighting to obtain any of the effects obtained by conventional lighting and photography.
- (m) Setting up the lighting of the set shall require little specialized optical knowledge, and shall be conveniently possible by the usual experienced electricians.
- (n) It shall be flexibly adaptable to composite or process shots as well as to miniature work.
- (o) It shall preferably enable making a number of simultaneous angle shots from different viewpoints, with different types of lighting; and each of these shall have increased depth of field as required.

While the above are extremely difficult specifications, they have been met by the newly developed IR System. So far as is known, they have never previously been met; and there is reason to believe that no other method of meeting these specifications with conventional optical elements alone is possible.

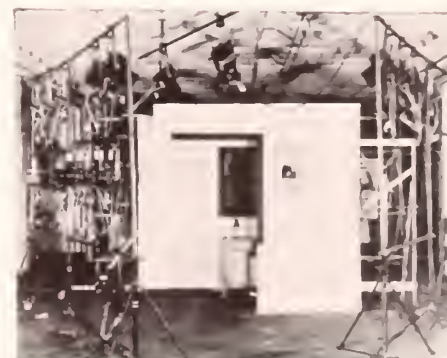
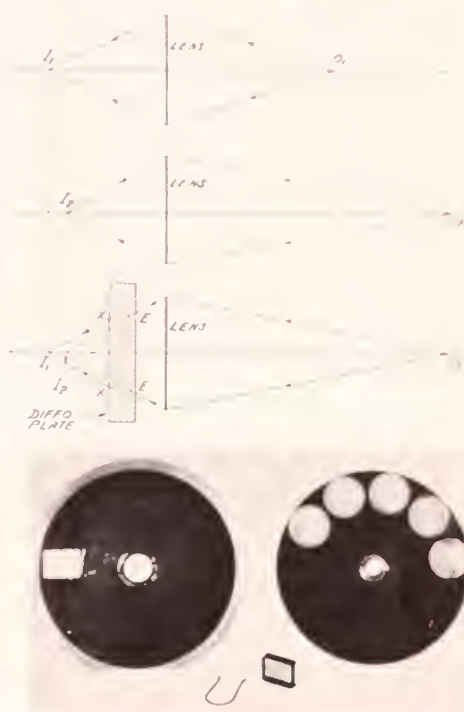
In ordinary photography, each frame or picture represents a view from a

uniquely focused lens of an entire and overall-illuminated object space. In the IR System, each frame or picture represents the composite of a number of views made by a multiply focused lens, each of which views covers only a region or division of the object space so selected that the picture of such region is altogether in focus. Thus the IR System includes the photography within a single exposure period (single frame) of the various adjoining regions of the object-space in such fashion that

- (a) each region has an identifiable illumination, with minimized spillover of illumination of other types, and
- (b) the identifiable illumination from each region is first identified and in effect segregated, and, second, brought to the same focal plane as that from all other regions by means of a differential-focusing device.

The identifiable regional illumination may be of the following types:

- (a) It may be suitably polarized light. This method is not recommended in general because of the non-retention of the plane of polarization of light on reflection from most surfaces.
- (b) It may be appropriately colored light. In this case, each region in the object space is illuminated by light occupying a different spectral range, thus enabling its later identification either by color filters or by the differential refraction (dispersion) of some refracting system. The method amounts to establishing a selected color configuration (e. g., a spectrum, broadly speaking) axially through the object space, and then introducing a compensating amount of longitudinal chromatic aberration into the objective lens system so that the colored light from each region is brought to the same focal plane and there correctly imaged.
- (c) It may be correctly timed illumination. In this instance, the total time for each frame exposure is divided into a number of portions. Each region in the object space, as defined below, is illuminated during a selected portion or portions of the total available exposure time and is not illuminated at any other times during the exposure period. This last proviso is fundamentally novel, and is important in the realization of the method. At the camera lens, a differential-focusing device is synchronized with the light coming from each corresponding region in such fashion that the light from each region is brought to the same focal plane. The resulting picture therefore has increased depth of field since it consists in effect of the composite of a number of pictures each of which is in-



Above, Fig. 4, diagram of action of 'Diffo' plate beneath, Fig. 5, special aperture-plate and 'Diffo' shutter used in IR cinematography; bottom, Fig. 6, experimental lighting set-up, using synchronized shutters, for IR System tests.

herently in focus, which pictures in their totality form a complete picture of the object space.

This method amounts, in its simplest form, to sending a wave of illumination (in the form of an axially extensive and steadily deepening slab of illumination) in some systematic fashion through the object space, and pacing it by a synchronized wave, so to speak, of correlated focusing of the objective lens such that the light from all objects on the set is brought to the same focal plane. It also amounts to a sort of third-dimensional luminous scanning of the set followed synchronously by the appropriately coordinated focusing of the lens

(Continued on Page 38)





Director of Photography John Mescall, A.S.C., illustrates method of making the tests described. "Gobos" in front of camera are moved between takes, and dimmer in foreground controls lighting-brilliance.

## Coordinating Exposure-Meter and Processing For Effect-Lightings

By JOHN J. MESCALL, A.S.C.

THE various methods of using both the reflected-light and the incident-light types of photoelectric meters for key-light measurements and normal lightings have been so frequently discussed, in and out of print, that they are thoroughly familiar to most cinematographers. The technique of using meters as a guide to exposure values and lighting balance in effect-lightings, however, has not received so much attention. Yet, to my mind, it is in this type of measurements that the meter can often be the most useful, for such lightings depend on delicate gradations of lighting and exposure which are often difficult to measure visually.

While it is probable that either an incident-light meter or a reflected-light meter could be used for measurements of this kind, my own experience has been solely with the reflected-light type—my Weston "Master," which I have found capable of furnishing a quick and accurate guide in making effect-lightings.

The first, and most essential step in using a meter for this type of work is to find an accurate basis by which the meter's readings may be coordinated with the processing given your negative by the laboratory individually involved. In my case, I have keyed my system to the negative development of the Paramount laboratory, as my last several pictures have been made at that studio. For some previous pictures, however, I employed the same basic system with negative processing done by the Consolidated laboratory, and of course the prin-

cipal may be used, with suitable modifications, for film processed in any laboratory.

Every laboratory has what might be called a "pet" printing-light: a point, usually in the middle of the printing scale, at which they like to have their negative print. Most cinematographers, too, have similar favorite printer-settings which they feel will get the utmost from their negative. In the present instance, both the Paramount laboratory chiefs and I favored light 12, so I have keyed my meter and its use to that point.

The next step is to determine the range of illumination necessary to produce the full range of photographic densities from complete black to clear white with negative developed to the laboratory's normal standards and printed on that favored printer-setting.

It is a well-known fact that, regardless of the intrinsic color of an object, we can, by varying the intensity of its illumination, make it appear on the screen in any tone we want, from black to white. A white object, with no light falling on it, will photograph black; a jet-black object, if sufficiently over-lit, can be made to appear pure white.

For my test, I set up a fairly large sheet of neutral-gray cardboard (about three feet square) in front of the camera. At the top, running horizontally, I placed a strip of black velvet. At the bottom, also running horizontally, I placed a similar strip of white cardboard.

In front of the cardboard test-sheet I placed two flat black screens or "gobos,"

so that only a narrow, vertical strip of the cardboard was visible. During the test, I moved these so that, by rewinding the film in my camera between each exposure, I photographed successive parallel, vertical strips of the test-card.

Each of these strips received a different intensity of illumination, carefully measured by the meter, and with the meter's reading pencilled in below the strip on the white panel. The ultimate result in the completed test was essentially that of a graduated gray-scale, produced by changes in illumination, instead of variations in the subject's actual tone.

The meter-readings were made with the meter about three inches from the subject, and with the hinged light-baffle over the photocell swung back, increasing the meter's sensitivity and bringing the low-intensity scale into place on the dial. In the successive takes of the test I varied the illumination (by means of dimmers) until virtually the whole of the low-range scale had been covered.

The first test, for instance, was made with the light so dimmed that I got the meter's minimum reading of .2; the next two exposures were made with the meter's needle pointing respectively to the next two, unnumbered, blocks above .2; the third take was lit to a reading of .4 (the next numbered calibration), and so on until we had reached an illumination-reading of 50.

The negative was then put through Paramount's usual time-and-temperature development, and a print was made using printer-light 12.

The results on the screen showed me that at any light-value below a 1.6 reading, my subject would be rendered as black, regardless of its actual coloring. From that point on up to a brightness-reading of 25, I obtained a normal range of halftones. At readings of 25 and over, my subject—again regardless of actual color—would be rendered as white. With the actual black and actual white sections of the test-subject, this region was naturally narrowed considerably. Differences in the gradational quality of each laboratory's negative processing will also compress or expand these limits somewhat.

Putting this data to work under practical conditions thereafter becomes a simple matter of taking separate brightness-readings as the nature of scene and lighting may indicate, and modifying the lighting accordingly. For example, suppose that in effect-lighting a set I want a chair to be silhouetted against the back-wall. I take a reading on the chair: if the meter indicates a brightness of 1.6 or less, I know that it will be rendered as black. I can then adjust my illumination of the wall behind the chair to whatever intensity will give me the tone I want there: if I want it pure white, to form a strong contrast, I know that a reading of 25 or over will give a clear white rendition. If I want a bare minimum of contrast between the chair and its background, but still preserving the silhouetted effect, I light the wall so that

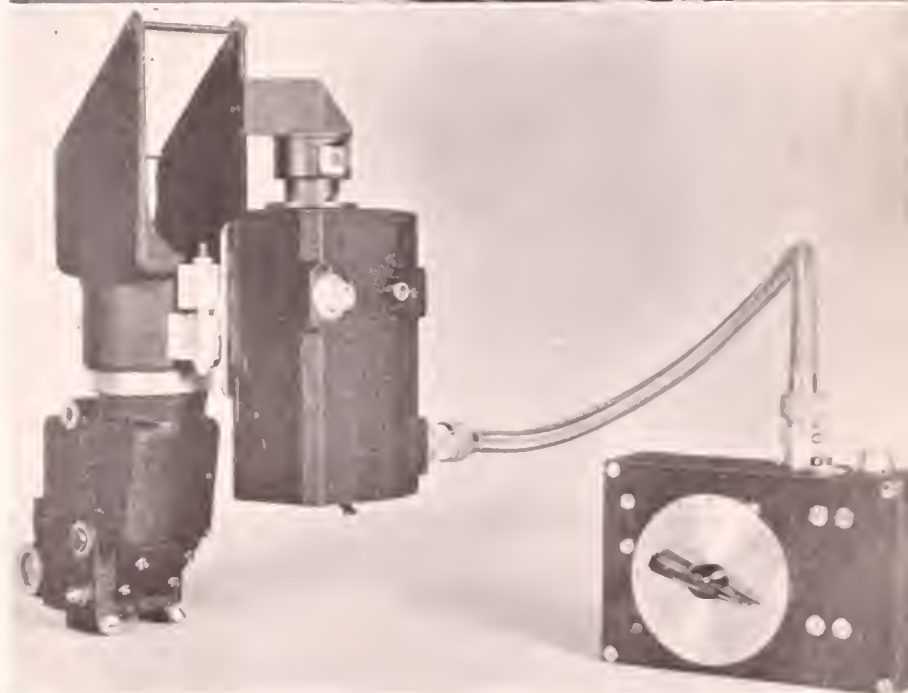
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# The Air Corps' Newest Camera Gun

By REED N. HAYTHORNE, A.S.C.

Washington Staff Correspondent



Above, loading the GSAP Camera; middle, camera is "fired" by pressing trigger on plane's control stick; bottom, the GSAP Camera, with overrun control device. Official Photos, U. S. Army Air Force.

HIGH above the clouds two tiny pursuit planes in combat maneuvers jockey for position. One pilot gets "on the tail" of the other plane, and plunges toward him with his trigger switch pressed hard. There is no burst of fire, however—no airplane falling in flames. The sequel to this exciting drama of the skies comes a few hours later, in an Air Corps class room.

Here the instructor and the students view a movie, composed of machine-gun camera pictures, obtained when the trigger was pressed by the two pilots in their mock dogfight. These are pictures which indicate whether the pilots would have scored hits on their adversaries, had they been using "live" ammunition instead of movie film.

The use of gun-cameras for training pilots in aerial gunnery dates back to World War I, as does the actual use of machine-guns in aerial combat. But just as the actual armament of heavy-caliber machine-guns and aerial cannon, now in use on our newest planes is far superior to the one or two hand-operated guns which armed planes of the first world war, so is the new training equipment far more efficient than the first gun-cameras.

Today the Air Corps is putting into use its new gun-sight aiming point camera, the GSAP, so named because of its optical system, which shows in the finder not only the target of the gunner but also a picture of the sighting apparatus used, and records both of these on each frame of film taken. In addition, the new equipment has an "over-run" device, which keeps the camera going after the pilot ceases "firing" for a predetermined time, to record what happens after he ceases to fire.

Earlier gun-cameras were mounted on machine-gun mounts, necessitating removal of part of the armament, but today's cameras are fixed behind the gun-sights, so that the plane may carry its full complement of guns in addition to its recording device. By this means the camera may be carried into actual combat, and worked simultaneously with the guns to provide a record of the combat. Here again the overrun device is an advantage, for the pilot may follow an enemy plane down to its crash after it goes out of control, and the camera will continue taking pictures of it after he has ceased firing his guns.

The new air corps GSAP camera is electrically driven, equipped with a 50-

foot film magazine using standard black-and-white 16mm. motion picture film. The pilot may vary the speed of the camera from 16 to 64 frames a second by a reset knob. The machine compensates for atmospheric conditions by aperture controls for bright, hazy, and dull weather, which are accessible in flight. But the film latitude is sufficient for the camera to produce satisfactory pictures if the setting is within the equivalent

of a stop-and-a-half of the proper setting. Like most aerial cameras, the focus is at infinity, and the camera is equipped with a film-footage indicator.

The device is so designed that the optical system showing the gunsight in each frame may be replaced with a straight lens arrangement to get ordinary pictures without the gun-sight, if desired. Also, provision is made to heat

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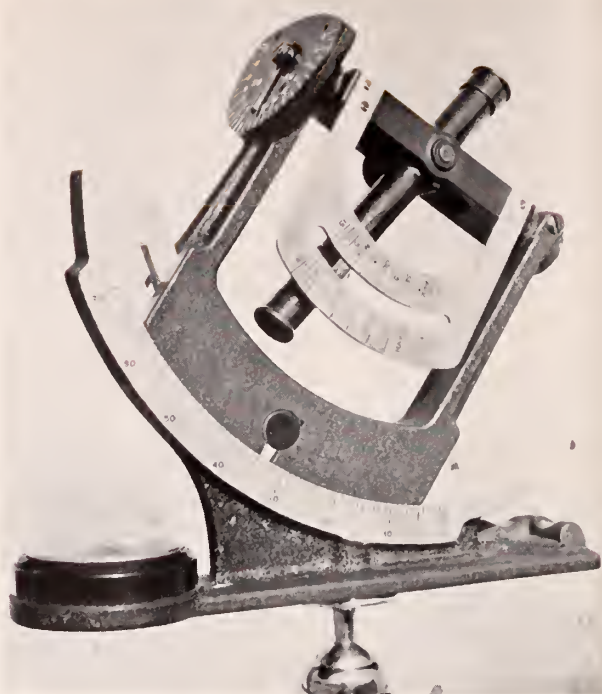
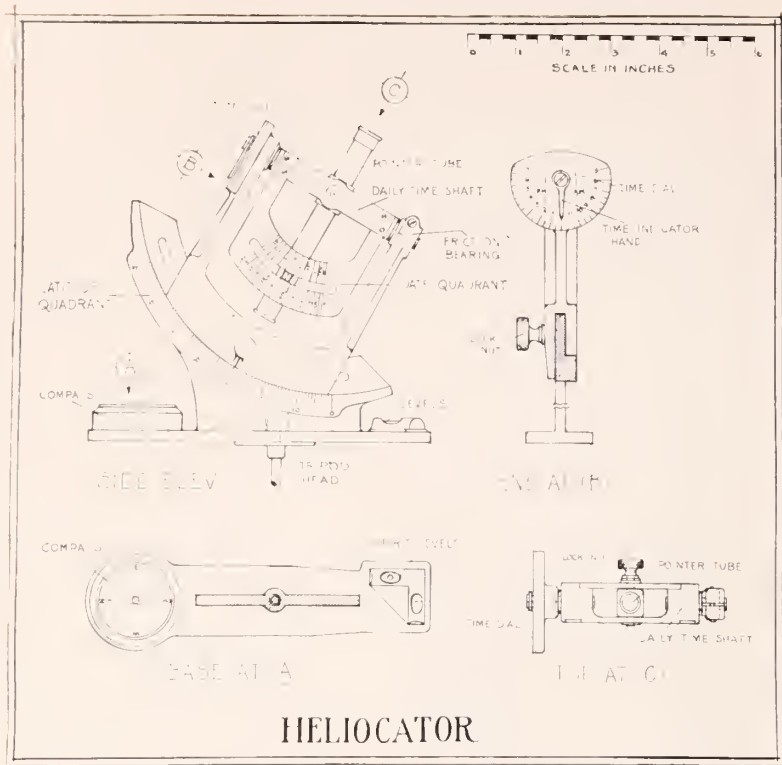


Diagram and photograph of the Heliocator.

# Determining The Sun's Angle For Any Location

By LEO KUTER

**T**HE need for an instrument that would readily indicate the position of the Sun in the sky at any hour of any day of the year led to the design, construction and subsequent use of the "Heliocator," or Sun Pointer, herein described, at the Warner Brothers Studios, at Burbank, California.

The photographing of exterior motion picture settings, or locations, during the day, is of course almost entirely dependent upon the astral presence of the Sun. It follows therefore that the various positions assumed by the Sun, in its movement across the sky, must be carefully considered in the design and orientation of such settings, and in the choice and selections of such locations.

Settings and locations which involve the seasonal shadows of hills, mountains, canyon walls, huge trees or nearby high buildings, etc., may be found, upon the shooting date, to be in complete or partial shadow, if the directional or angular variations of the Sun have been merely guessed at, or completely ignored, as sometimes happens.

In order to obtain the best photographic results, and to intelligently set up shooting schedules and accurately time company "calls," it is most necessary to have *advance knowledge during the planning period*, of just what the

exact position of the Sun will be at all hours of the day, in relation to the set or location to be photographed upon any specific date required. This information the Heliocator gives easily and quickly, and a brief description of the instrument follows.

It consists of a base into which is fixed a compass and a two-way spirit level, and having an upright, circular segment on which Degrees of Latitude are indicated. This is the *Latitude Quadrant*.

Arranged to slide upon this quadrant is an erect yoke, between the arms of which is set a rotating split shaft. Pivoted in this shaft and revolving in a line with its axis is a hollow tube, or pointer, whose movement is regulated by a small quadrant upon which are indicated the days of the year. This is the *Date Quadrant*.

The split shaft is the *Daily Time Shaft* and, rotating on its axis, carries with it the Date Quadrant and the Tube Pointer. Fixed to the end of this time Shaft and also rotating with it across a dial fixed to the yoke, is the *Time Indicator Hand*.

The setting up and operating of the instrument is extremely simple.

1st. The lower curved slide of the yoke is set and locked to the latitude of

the observation on the Latitude Quadrant.

2nd. The indicator attached to the Tube Pointer is set and locked to the Date Quadrant at the date for which the observation is being made.

3rd. The instrument is leveled and oriented with the compass needle pointing to the Compass Declination of the locale. (Not at N. or North on the compass, except when knowledge of this Declination is missing. More about this later.)

The Tube Pointer may now be revolved on the Time Axis, and will follow the Sun's path throughout the day. The observer follows this path by sighting through the Tube and the time any shadow will fall upon the position occupied by the instrument is found by reading the time on the Time Dial when any obstruction appears between the observer's eye and the open sky.

This time, however, is *True Sun Time*, and except in a few comparatively rare locations and dates, will not vary from *Standard Time* by more than 30 to 40 minutes. The explanation and method of arriving at accurate Standard Time will be found later in this article.

The principles upon which the instrument is designed are well known to anyone familiar with the operations of a marine sextant, or the equatorial mountings of a telescope, but are here reviewed for the benefit of those without that knowledge.

As the Pointer must indicate the Sun's location at all times it must follow the two principal apparent motions of the Sun. These are:

A. The daily East to West movement from sunrise to sunset due to the Earth's rotation on its axis, and:

B. The annual North and South travel







This type of diffusion characterized the finest photography of twenty years ago.

# How Desirable Is Extreme Focal Depth?

By CHARLES G. CLARKE, A.S.C.

**D**URING the past year there has been a great deal of discussion as to the merits (or otherwise) of the so-called "pan-focus" system of stopping down to unusually small lens apertures to obtain extreme depth of field, as Gregg Toland, A.S.C., did so spectacularly in filming "Citizen Kane." Some cinematographers have urged that this technique represents one of the outstanding artistic advances of recent years. Others have argued just as insistently that this type of wiry-sharp camerawork was something we had discarded twenty or thirty years ago, and that, moreover, it tended to make the screen's story-telling technique dangerously static.

I wonder if the actual truth doesn't lie somewhere between these extremes?

Cinematography, it should be remembered, began its existence as a strictly mechanical process of making a photographic record of scenes and objects in motion. It was not until after the turn of the century that it was discovered that motion picture scenes, properly strung together, could serve as a medium for telling a dramatic story. Since then, the history of the cinema has been a constant search for the best way of combining the inherently accurate mechanical record of the camera with the dramatic and emotional values necessary for true story telling.

In the early days, the lenses available for cinematography were, to put it mildly, not of the best. Neither were emulsions or laboratory-processing. And as the cinema was just emerging from the mechanical record stage when the

only aim was to get some sort of a picture on the screen, the ideal of good cinematography became that of getting not only a picture, but a clearly recognizable picture on the screen. Detail in every portion of the frame was the most cherished goal.

In still-photography, too, it was the day of super-crisp definition. Photography was just emerging from the "rapid rectilinear" era, and the almost unnaturally perfect detail of an anastigmat stopped down to  $f:64$  was enticing.

But before long cinematographers and still-camera pictorialists alike began to discern the artistic limitations of this  $f:64$  definition. Still photographers commenced to realize that a picture in which you could count every leaf on a tree a hundred yards away showed you *more* than the best eye could hope to see in reality. They discovered that injecting a softer optical quality into the picture made it more pleasing, and gave it an artistic feeling none of the  $f:64$  school could ever capture.

At the same time, cinematographers, confronted with the task of making the tender and romantic moments of their pictures emotionally moving, also found that softness heightened the pictorial and dramatic value of their scenes. They discovered that flawless definition could tend to exaggerate the two-dimensional flatness of their pictured image on the screen, while softness, especially the sort obtained using lenses are relatively open apertures, worked hand in hand with lighting to suggest roundness and reality.

So the pendulum began to swing. As

the years went on, it swung to an extreme of softness. Look at any picture of fifteen or twenty years ago—still or movie. If it had any pretensions of being an example of good photography, it was almost certain to be an extreme case of "fuzzyography." On the screen especially, scenes of any dramatic value, or close-ups of women stars were almost invariably photographed with comparatively soft lenses, at maximum aperture, and further softened by incredibly strong diffusion—discs, gauzes, and the like—until the result on the screen was very sketchy indeed.

To gain this added softness and roundness, we went to great extremes. On exteriors, where ordinarily one would inevitably have to stop down to get a normal exposure, we employed Neutral Density filters and the like to permit us to shoot our exteriors, as well as our interiors, at apertures close to the maximum— $f:2.5$  or thereabouts—in the interests of soft quality and natural roundness. We plagued the film manufacturers of film for softer and yet softer gradations in emulsions, and our laboratories for softer quality in their development and printing.

Inevitably this trend carried to an extreme, and the pendulum began to swing back the other way. Cinematographers began to realize that not all pictures could stand this visually soft treatment. Some—like the gangster stories, and some types of horror pictures—demanded harsher, crisper visual quality. Other stories had a more or less documentary flavor, which demanded camerawork that stressed realism, so that the story reached the screen with more the quality of a well-photographed newsreel than of a studio-made production.

Today, it would seem that the pendulum has very nearly reached the opposite extreme in its swing; certainly, it would seem difficult for any films to go much farther in the direction of crisp definition and realism than Toland's "Grapes of Wrath" and "Citizen Kane." And though this basic technique has been more or less extensively used by other cinematographers on other pictures, both before and since "Citizen Kane," it would seem likely the trend is about to swing back toward softer quality again.

Certainly, we are seeing it demonstrated that in making constant use of short-focus lenses and abnormally small apertures we often gain extreme depth and definition at the price of that illusion of roundness which—fully as important as depth or definition—is a necessity in conveying the illusion of three-dimensional reality in our two-dimensional pictures.

In this straining for exaggerated focal depth, too, there is definite danger of overlooking one of the basic factors which makes the screen so powerful dramatically: its selectivity. In the pioneer movies, as on the stage, the story was told from one angle only—that of the long-shot. Intimate action had to be

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SINCE the release of the spectacularly-photographed "Citizen Kane," the name of Gregg Toland, A.S.C., has probably been more extensively publicized than that of any other cinematographer in the history of the industry. Thousands of people who had previously never given a thought to the men who photograph the pictures they see, now speak knowingly of the importance of the cameraman's contribution, and refer to Toland as Hollywood's foremost master of the camera.

Most of Toland's fellow cinematographers also agree in rating him very close to the top of the camera profession. But with one difference: they base their judgment on the many superbly-photographed productions he had filmed before "Citizen Kane" and its attendant publicity came along. For "Kane" and Toland's treatment of it sharply divided the opinions of the professional photographic community. Some feel he has made a tangibly worthwhile contribution to camera technique. Others feel just as strongly that the "Kane" technique is reminiscent of methods discarded before cinematography reached its present maturity. But they all agree in praising the artistic and technical skill which produced such films as the Academy Award-winning "Wuthering Heights," "Intermezzo," "The Long Voyage Home," "Grapes of Wrath," the Technicolor "Goldwyn Follies," and innumerable others.

Most of them feel, too, that Toland's acknowledged brilliance has placed him in the most nearly ideal position any Director of Photography has enjoyed since the halcyon days when D. W. Griffith and Billy Bitzer were between them creating the basic technique of the screen. For Toland, as Chief Cinematographer for Samuel Goldwyn, enjoys the confidence of a producer whose chief aim is to turn out the most nearly flawless productions possible. Inevitably, Toland's hand is more free than most; he is able to participate actively not alone in the actual shooting of Goldwyn productions, but to a surprising extent in shaping and completing them as well. Most important of all, he is able to experiment, both technically and artistically, on a scale impossible where cinematographer and producer alike are bound by the restrictions of a rigid schedule and budget.

One of those experiments, first tried out on a conservative scale in scattered scenes for "Wuthering Heights," led to the "Citizen Kane" pan-focus technique. But he has made many others, in other directions. He was among the first, for example, to utilize Super-XX negative as a production emulsion, and among the first, too, to enthusiastically endorse today's fast films when they made their bow some four years ago. He was among the first, if not actually the first top-flight cinematographer to experiment with coated lenses and to stake his photographic reputation on their performance on an important production.



## Aces of the Camera XIII: GREGG TOLAND, A.S.C.

By WALTER BLANCHARD

Gregg Toland himself is as unlike the popular conception of a top-rank director of photography as can easily be imagined. For one thing, he is young. The official records of the A.S.C. give his age as only 37, which makes him almost without question the youngest of the industry's ace cinematographers. Slim and rather slightly built, he carries himself with a slight stoop which makes him seem at once smaller and older than he really is, and probably indicates, as well, something of the tremendous burden of responsibility that rests on his shoulders.

He is, I should say, very fully conscious of that responsibility. He throws himself into his work with the same tensely nervous energy that characterizes so many of the photographic leaders of the industry. Indeed, he gives the impression of being physically tired—until you get him started talking about his work. Then he brightens up, flashes a disarmingly youthful smile, and speaks with almost boyish enthusiasm about this idea or that he is working with.

He's keenly conscious, too, of the vital part a director of photography can play in preparing and making a picture if the studio heads will only realize he

can be more than merely a photographer. If you know him well, you sense a consuming desire on his part to make the opportunities and acclaim that have come to him as an individual help "sell" the camera profession as a whole not only to the public, but to the industry itself.

His own association with Goldwyn, Orson Welles, Howard Hughes and other outstanding producers has given him unusual opportunities not only to dare to do the unusual in camerawork, but to put the imprint of his picture-trained mind on the making and presentation of every production with which he is associated. But—and you can feel him mentally underscoring this—he isn't the only cinematographer capable of playing such a part in the planning and realization of a film. There are many other directors of photography who, granted similar opportunities, could contribute just as outstandingly to making their productions better examples of screen entertainment. What he does in this direction, he hopes, will help give some of those others a chance by making other producers ask themselves, "If Sam Goldwyn gets so much help by giving Gregg Toland a chance to take

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# A.S.C. on Parade

We're glad to report that the latest news from the 20th Century-Fox unit on location in Honolulu tells that all members of the troupe, including Director of Photography **Harry Jackson**, A.S.C., Technicolor Specialist **Wilfrid Cline**, A.S.C., and Assistant Cameraman **J. Stout**, son of **Archie Stout**, A.S.C., were safe aboard one of the Navy's battle-wagons at sea when the Japs made their knife-in-the-back attack. We understand they've obtained some outstanding Technicolor footage, all or part of which may be taken over by the Navy.

Director of Photography **Gregg Toland**, A.S.C., has doffed his civvies for the uniform of a Lieutenant in the Navy's Photographic Section. Accompanied by Lieutenants **Sol Halprin**, A.S.C., **Arthur Arling**, A.S.C., **Harry Davis**, A.S.C., and several others, he's off for active service "for duration." Before leaving, the A.S.C.-Navy lensers prudently raided the Mitchell camera factory and made off with every available camera.

Yachtsman **Vernon L. Walker**, A.S.C., is also doing his bit nautically. His 38-foot cruiser "Relax" has gone into volunteer service with the U. S. Coast Guard—in wartime part of the Navy—as a patrol-boat. Skipper **Walker** stands by to go to sea with his ship as Master, and **Dick Davol**, from RKO's Camera Dept., is Mate, with a crew of coast guardsmen. What with reports of Jap subs off the California coast, it looks to us as though **Verne** had maybe given his boat the wrong name—!

Lieutenant **Victor Milner, Jr.**, U. S. Army Air Force, is reported to be one of the few Army fliers to rate a Christmas vacation. Son of **Victor Milner**, A.S.C., young **Milner** is recovering from injuries received in a serious crash while instructing a student at the Air Force's training school in Texas, and was granted a holiday furlough to visit his celebrated dad. We'll bet he made some of the other Army airmen doubly envious, for when he dropped in at Paramount to say hello to his old friend **Billy Mellor**, A.S.C., the still-man insisted on taking his picture with lovely **Madeleine Carroll**.

If you saw those sensational Pathe News scenes of the Japs' attack on Hawaii, thank **Len Roos**, A.S.C., F.R.P.S. who lensed 'em. **Len**, so we learn, has just received his appointment as the official representative of the newsreels' wartime pool of camera-crews. He covers the Hawaiian front.

Friends of **Roy Overbaugh**, A.S.C., who have been wondering why they haven't heard from him in all these months ought to know **Roy's** been mighty sick, almost fatally so, in fact. He's been in the hospital since last April, undergoing two operations. But he's better now, and would appreciate visits from his friends.

With **Solly Halprin**, A.S.C., called away on active duty with the Navy, his place as Head of 20th Century-Fox's Process Department has been taken by **Edward J. Snyder**, A.S.C.

**James B. Shackelford**, A.S.C., sailed December 19th for South America. He'll be filming an adventure and animal film in Brazil. Present plans are that "Shack" will begin his trip by a two-months' trip up the Amazon, followed by a visit to Rio de Janeiro, after which he'll head into the famed **Matto Grosso** country. He promises to send us appropriate stills and reports of his travels.

We ran into **Ted Tetzlaff**, A.S.C., on the street one day just before Christmas. We gather his prayer to Santa Claus was for a really good story to direct, 'counta he'll still on Paramount's payroll as a Director. Why is it, anyway, that no producer has yet handed any cameraman an even half-way decent script when they promote him to directing?

**Leon Shamroy**, A.S.C., with "Roxie Hart" (nee "Chicago") duly committed to Plus-X, draws the lensing assignment on 20th Century-Fox "Ten Gentlemen from West Point" as his next.

**Harold Lipstein**, A.S.C., off to the desert to lens special desert scenes for MGM's coming colossal "Rio Rita."

We hope there's nothing to the rumor we hear about one rising young member of the A.S.C. who, when another ditto visited him on the set recently, asked his visitor to leave. There's such a thing as professional courtesy, you know—also swelled craniums.

Did you know that during the last year or so **Alvin Wyckoff**, A.S.C., has been putting in his spare time at the university, annexing a Doctor of Science degree? That makes at least the fourth member of the A.S.C. who can be properly addressed as "Doctor." The others include **Ted Sparkuhl**, A.S.C., who used to be a practicing medico; **Floyd Jackman**, A.S.C., who is one of Hollywood's best toothpullers, and **Floyd Crosby**, A.S.C., who we understand also has the right to the handle of "Doctor," though he never uses it.

Speaking of **Floyd Crosby**, A.S.C., he's still deep in Mexico working on Orson Welles' forthcoming **Dolores Del Rio** starrer. He took the assignment over when **Al Gilks**, A.S.C., was called into Navy service, and we understand he's going to town on it. He recently sent for one of those new Norwood exposure-meters, by the way.

**James Wong Howe**, A.S.C., is even talking Chinese with a Brooklynese-Irish accent, they say, since he's been lensing Warner's "Yankee Doodle Dandy," the filmography of **George M. Cohan**.

**Tony Gaudio**, A.S.C., very much Americanized in spite of his Italian birth, tells this one about the state of his native country under the chap **Tony** politely refers to as "that soonabeech Mussolini." He says if you're an optimist in Mussoliniland, your slogan is, "We're going to lose the war." If you're a pessimist, you say, "Yeah—but how long do we have to wait before we lose it?"

Miss **Bette Davis**, President of the Academy of Motion Picture Arts and Sciences, lately announced the appointment of a Committee of Directors of Photography to consider rules to be used to govern this year's Cinematographic Awards.

Membership of the Committee consists of: **Ray Wilkinson**, Chairman, **John Arnold**, A.S.C., **Dan Clark**, A.S.C., **Charles Clarke**, A.S.C., **Robert DeGrasse**, A.S.C., **Elmer Dyer**, A.S.C., **Arthur Edison**, A.S.C., **Fred Gage**, A.S.C., **Merritt B. Gerstad**, A.S.C., **Ernest Haller**, A.S.C., **C. Roy Hunter**, **Milton Krasner**, A.S.C., **Art Lloyd**, A.S.C., **Sidney Lund**, **Rudolph Maté**, A.S.C., **E. B. McGreal**, **Arthur Miller**, A.S.C., **Ernest Miller**, **Victor Milner**, A.S.C., **L. William O'Connell**, A.S.C., **Robert Planck**, A.S.C., **Charles Rosher**, A.S.C., **Joseph Ruttenberg**, A.S.C., **Mack Stengler**, A.S.C., **Karl Struss**, A.S.C., **Ted Tetzlaff**, A.S.C., **Leo Tover**, A.S.C., **Charles J. Van Enger**, A.S.C., **Joseph Valentine**, A.S.C., **Joseph Walker**, A.S.C., and **Gordon S. Mitchell**, Manager of the Academy Research Council.

Did you notice the credit-titles on the recently previewed "Shanghai Gesture?" Director of Photography **Paul Ivano** took his credit MINUS the A.S.C. he's entitled to append after his name. But Director **Josef Von Sternberg**, also an A.S.C. member, proudly took credit in large letters as follows: "Directed by JOSEF VON STERNBERG, A.S.C." Thanks, **Joe**, for a very fine compliment.

**Jack Guerin**, A.S.C., took time out from his Gasparcolor activities to spend the holidays with his folks in Louisiana. Wonder if he ran into the alphabetical Paramount Newsreel ace, **John L. Herrman**, A.S.C., F.R.P.S., F.R.S.A., down New Orleans way?



# THROUGH the EDITOR'S FINDER

WITH America's participation in this war not yet a month old, the motion picture industry is already settling into the pattern of its participation in "all-out" war. Many there are in all branches of the industry who have joined the Nation's Armed Forces. Producers, Directors, Cinematographers, Writers, Sound-engineers, Actors and many others have gladly abandoned safe and lucrative jobs to put their particular skills actively to work in uniform.

But those who remain have a task no whit less important, fraught with difficulties and responsibilities, as well. Theirs is the twofold task of carrying on under wartime difficulties—even, it may be, under fire—and at the same time turning out steadily better screen entertainment to the end that morale on the vital "home front" may remain high.

We in the cinetech community are going to have to learn how to make pictures in spite of shortages of many types of equipment and materials we once deemed indispensable. And no wonder: factories capable of turning out cameras and projectors of the type that made American cinemachinery supreme throughout the world have the uniquely high skill needed to produce in quantity many types of precision war implements. The factories which made lamps and many other accessories have skill which is already solving many perplexing problems in making aircraft assemblies to defend our studios. Plants which have served the motion picture industry in peace time, with its perpetual array of unconventional problems and its perpetual rush when in need of a new device, are uniquely adapted to meeting the unconventional problem, and solving it speedily and well in wartime.

We can be thankful for this, and doubly thankful that these firms which supplied our peacetime needs habitually built into their products ruggedness and endurance far exceeding those any other nation ever built into similar precision machinery. Our cameras, recorders, lamps, dollies and accessories may not all be new: but thanks to the American ways of design and craftsmanship, we can depend on them to keep on doing their job "for duration," even as their human users do theirs.

WITH the threat of bombings and blackouts, the studios have revised their daily time-schedule. As this is written, they have just gone on a strictly daylight basis, working from 8 to 5 daily, with night work eliminated. Night exteriors are barred, save as they can be photographed by day with filters, or filmed indoors under lights.

It is a strange commentary on human nature that it took the world tragedy of a war to bring this about. For years, every employee group in the industry has been fighting to bring the industry's

leaders to a realization that film workers, no less than other people, work best if they can keep normal working hours with time for a normal home life in between. The reply to this has always been that such hours—sometimes sixteen or twenty out of the twenty-four—were economically necessary to keep production costs and receipts profitably in line.

Already, the reports of the first day of the industry's new daylight schedule are disproving this. Studios are saving some money by the elimination of the large overtime payments made to movie workers for working unusually long hours; the workers are offsetting this loss to some extent by the slight extension of schedules needed to turn out equivalent footage without overtime work. Most important, the heads of our industry are discovering that men and women who put in a normal working day can work better and faster than men and women forced to work all the day and half the night. Reports from every studio indicate that on today's wartime eight-to-five basis, more scenes are being shot daily. We've an idea they'll prove to be better scenes, too, for on-the-set creators can turn out better work when they're no longer physically and mentally tired.

Predictions of any sort—especially in times like these—are usually hazardous. But we'll venture one: when this war is over, the industry will find this new daylight working day, adopted originally solely as a war measure, will be worth-keeping because, in war or peace, it is more efficient, producing more and better work!

THE professional, theatrical motion picture has been recognized already as a wartime essential. Non-theatrical and amateur movies should, we believe, receive very nearly similar recognition.

The value of employee-training films made for use in Defense Industries will be readily appreciated. Anything that can contribute to greater efficiency among Defense Workers is vital: if 16mm. movies can help increase the efficiency of workers so that they can turn out one plane, one tank, or even one shell more per day, those films shall have richly served their country. In other fields, similar films can serve importantly in showing the general public how to make existing supplies and services go farther, in spite of wartime curtailments. Such non-theatrical films, too, should be encouraged.

But the value of strictly amateur home movies may not be so immediately apparent. Yet it exists. Civilians in wartime need some means of mental escape from the nervous strain under which all must live and work. Theatrical entertainment has been recog-

nized as one of these psychological safety-valves. But it is only one, for there are times when it may not be possible to go to the theatre just to get an evening's respite from nerve-strain.

That is where such personal-participation hobbies as amateur photography and movie-making can play their vital part. They can be practiced largely in and around the home; certainly, the nation's amateurs are sufficiently patriotic to avoid using their cameras on subjects of military or tactical importance, if, of course, they are given warning of what those subjects are. But to the enthusiastic amateur photographer, there is nothing so completely relaxing—nothing in which one can so completely lose himself from the cares and worries of every-day life in peace or war, than practicing his hobby. How he does it may take different forms; some like to shoot pictures; others, to develop or print stills, edit or title movies, or tinker up some needed gadget. This writer, for example, finds nothing so relaxing when frayed, tired nerves are shouting, as to take a few hundred feet of substandard cine-film and lose himself for an hour or two in editing it.

The availability of new amateur cine equipment has already been considerably curtailed by the Defense Program; it is likely to be still further reduced by the "all-out" War Effort. And very properly so. But in behalf of the nation's 2,000,000 amateur still and cine enthusiasts, we urge upon the Nation's leaders that they look understandingly on the real value of the hobby. We urge that the supply of film and similar materials for civilian use may still be kept flowing, and that authorities—particularly local ones—may be wise enough not to place unnecessary restrictions on the use of cameras. Amateur photography and cinematography is too valuable a safety-valve for a big and important section of our people to be restricted unnecessarily when it is needed most!

As we commence our second year as Editor of THE AMERICAN CINEMATOGRAPHER, we'd like to express our heartfelt appreciation to all of the many friends whose encouragement has meant so much to our efforts to improve their magazine. Some of them we know personally; others we know only through correspondence or through articles submitted for publication. But all of them we count on as friends. And to them we want to say a sincere, and humble, "Thank you" for their heartwarming encouragement. During the past twelve months we've received more letters and other expressions of approval than we've ever seen come across this desk, and fewer complaints, despite the fact that to us each issue seems to fall distressingly short of the goal we've set ourselves.



# New Photographic Books

THE PHOTOGRAPHER'S RULE BOOK, *By Larry June* (McMillan, \$1.25). This little book is intended primarily for the benefit of the still-photographer with an inexpensive camera and little or no understanding of picture-making beyond the "you press the button, we do the rest" stage. It should serve its purpose admirably. It is almost the first book of its type we have seen which didn't overreach itself through trying to tell the beginner *too much* and confusing him with semi-advanced information about developing, printing, and enlarging for which he certainly isn't ready until he can turn out better, more interesting snapshots with his "Brownie" and drug-store finishing.

June hews strictly to the line of telling, in simple, understandable language how to use a cheap camera to make real pictures. He illustrates it with excellent pictures, made with the same, simple cameras his readers will probably use, supplemented where necessary by sketches which cleverly visualize such abstractions as *f*:-stops, shutter-speeds, and the like.

But just because "The Photographer's Rule Book" is intended for still-camera novices, don't pass it up. If you do, you'll also be passing up some chapters on composition and the like which should be helpful even to the owners of Lordly Leicas, Speed Graphics and cine-cameras! W. S.

"HOLLYWOOD" by LEO C. ROSTEN

UNDER grants from the Carnegie and Rockefeller foundations, Leo C. Rosten, author-sociologist, with the aid of eleven assistants, have investigated the movie colony of Hollywood.

The result has been a book that should not only be widely read but mentally digested by every individual who wishes to be factually enlightened about semi-mythical Hollywood, especially by those unenlightened remote individuals living in the environment of their own romantic dreams, those emphatic souls who believe they have a wee spark of genius resting within them undeveloped, waiting to be discovered and tutored into dazzling brilliance and fame.

Dr. Rosten lets you study Hollywood; he does not gossip with you. He tells you about the real Hollywood; the final result of long days and nights stretched over a toiling period of three years of labor.

The horrors of Hollywood have not been catalogued, nor has its virtues been whitewashed. Facts. You do with them as you wish. Hollywood is X-rayed and pulled apart—diagnosed.

The author has not been content to skim over the surface of scintillating brilliance, he has dug deep into the dark pits of blasted hopes and the wreckage of public opinion; far beneath the glamorous appearance of the surface.

He has lighted the treacherous, idiotic, scramble for padded publicity in the defense of the human nature of Hollywood to prove it is no different than the gilded aristocracy of other places.

He draws a sharp line of contrast. Hollywood is laid bare to the public gaze. The truth of fact is exposed. Statistics of interesting data stand out boldly to prove the fact; figures are truthful.

We are told that the outside world believes, "The movie colony to be more or less dominated by maniacs, operated under the laws of lunacy, and populated by an assortment of illiterates, divorcees, crackpots, and poltroons." In defense, it is said that, "Hollywood was not created out of a void; its characteristics were not invented; its people did not descend from Shangri-La.

"The men and women who work in Hollywood came to the film colony from other parts of America and the world; and they brought to Hollywood appetites which have been gratified, aspirations which have been realized, in this rich and indulgent community on the Pacific.

"The citizens of Kalamazoo who possess the unique and sometimes distressing temperaments of actors, writers, directors, producers and others of many crafts would not behave differently if THEY had the money, the opportunities, and the sanctions afforded the mortals who live in the movie colony."

Contrasts are sharp. ". . . uneducated captains of industry are praised as 'self-made men,' uneducated movie executives are dismissed as 'illiterates.' Erratic bankers are called 'eccentric,' but erratic movie makers are called 'crazy.' Hard-bargaining business men are admired for being shrewd; their counterparts in Hollywood are denounced for being 'mercenary.' And where the private indiscretions of Park Avenue are winked at as all-too-human peccadillos, those of Beverly Hills are paraded forth as proof of movie licentiousness."

It is admitted ". . . that things do happen." And so do things happen at other spots in these United States where people get together that would be just as severely criticized if the glare of publicity was turned on. However, "The mad days of Hollywood have passed their peak. There is an increased seriousness in the movie colony, and an approximation of dignity. . . . there is much in the town to command respect . . . those producers, writers, directors, performers, photographers, publicists, make-up artists, and members of a hundred other crafts who are skilled and who are responsible for the best that is on the screen are earnest, talented men and women who would stand out in any company."

Hollywood possesses the same degrees and levels of society as any other community. It has its poor, rich, and great.

"The movie colony is the high court of Hollywood; the movie elite is the regency council. . . . Its people are characterized by notoriety, not pedigree; its position rests on money, not birth; its fame depends on publicity, not ancestry. . . . Hollywood represents an aristocracy of wealth. . . . Its magnificos are young, untrained in the art of the good life, untamed by old codes of behavior. ". . . In such an elite, gradually enlarged and diversified . . . the people sees itself mirrored and seeks its models."—A. W.

*The American Cinematographer's Hand Book and Reference Guide—Fourth Edition; Compiled by Jackson J. Rose, A.S.C.* (Published by Jackson J. Rose, Hollywood, \$3.50.) During the past ten years the "Jackson Rose Handbook" has become without question the world's standard practical reference work on cinematography. Today's Fourth Edition worthily carries on the tradition established by the three successive printings which went before. It includes all of the highly practical phototechnical information in the previous editions, in many instances brought up to date for modern materials, methods and equipment, and incorporates some thirty additional pages of new data.

These additions include up-to-the-minute information on 16 mm. and 8 mm. cameras, lenses, film, projection, etc., and a considerably expanded coverage of still photographic materials and methods, including such timely matters as the use of the new Infra-Red "blackout" flashbulb technique for making speed-flash pictures by invisible light. Reflecting the increased importance of 16 mm. sound-on-film for both professional and amateur use, sections on 16 mm. recording and equipment make their appearance for the first time.

Our own experience with previous editions of Mr. Rose's volume is that it is essential for anyone active in cine or still photography. The new and larger edition bids fair to be even more valuable. We'd say it's well worth \$3.50 of any photographer's money!—W. S.

PHOTOGRAPHY AS A VOCATION, *By Andrew B. Hecht and George J. Berkowitz* (American Job Series, No. 24; Science Research Associates, 1700 Prairie Ave., Chicago.) This little booklet is an interesting survey of the vocational possibilities of photography in its various forms, giving at least an idea of what photographers in various types of work do, and the possibilities of making a career of such work. It appears to cover the various fields of still photography quite well, but unfortunately it makes scant mention of cinematography, commenting only briefly on studio and news-reel cinematography and ignoring the growing field of industrial or business-film cinematography. W. S.



# PHOTOGRAPHY OF THE MONTH

## THE NIGHT OF JANUARY 16TH

Paramount Production.

Director of Photography: John Mescall, A.S.C.

"The Night of January 16th," we suspect, was intended to be more or less of a routine, program-picture "who-dunit"; but John Mescall's camera lifts its very much above the program class. He gives it some of the finest dramatic camera-treatment we've seen in some time. From start to finish the film has that sort of photographic smoothness only the industry's top camera-experts can consistently maintain—a silkily-smooth visual quality that gives even the non-photographic viewer the feeling he has seen a "class" production.

Mescall's effect-lightings are particularly interesting, especially those in the earlier part of the picture. They do a great deal to build up the required melodramatic suspense; but they go farther than this. Mescall has handled his lighting of these sequences in such a way that the effects are logical and believable—a very welcome change from the all too-common practice of planning effect-lightings for pictorial or dramatic effect alone, without regard to their credibility. John Mescall's handling of these sequences are exceptionally well worth study by professionals, as well as amateurs. They're models of their kind.

His treatment of the players is fully up to his usual fine standard. The men, of course, have their share of strong character-lightings, and Ellen Drew's screen appearance, so surprisingly bettered in her recent release, "Our Wife," continues its improvement.

The process-work, as usual at Paramount, is uniformly excellent, and is particularly interesting in one scene where the two stars look from the window of a transport plane at the City of Havana, and the camera dollies up to and apparently through the porthole to a fine aerial view of Cuba's capital. The direction and cutting are interesting examples of fast-moving tempo; some of the cutting, for that matter, is almost too quick. There are several interesting transitions, not only the very well-used wipes, but also those employed in the courtroom sequence, to speed up the parade of witnesses on the stand. In this, the prosecuting attorney asks his question, then walks between camera and witness as the reply is finished, blocking off the view; as he passes, another witness is seen on the stand and dialog and action continue virtually unbroken. The settings by Hans Dreier and Hal-dane Douglas are also worthy of special notice; excellent in themselves, they are made particularly attractive by Mescall's lightings, and help give "The Night of January 16th" the impression of being an unusually well-mounted production.

## THE MEN IN HER LIFE

Columbia Production.

Directors of Photography: Arthur Miller, A.S.C., and Harry Stradling, A.S.C.

Directors of Photography Arthur Miller, A.S.C., and Harry Stradling, A.S.C., have, in "The Men in Her Life," turned out one of the most completely expressive examples of fine dramatic cinematography the season has seen. Sensitive-ly keyed to the dramatic moods of the story, their camerawork is at times almost hauntingly pictorial.

This is particularly true of the earlier sequences of the picture—perhaps the first half—in which compositions and effect-lightings build the production's basic mood like a powerful overture, with a power and beauty scarcely equalled since last season's Award-winning "Rebecca." Scene after scene in an eloquent tribute to the emotional power of the camera in skillful hands.

Production designer Nikolai Remisoff, too, has done a beautiful job on this picture—one that well atones for his overly aggressive sets which so marred "My Life With Caroline." There are several touches, too, such as the moving shadows on the tent-canvas which in the opening sequence plant the atmosphere of the circus, which show praiseworthy originality.

All told, "The Men in Her Life" should be on the "must" list for anyone interested in fine cinematography.

## THE FEMININE TOUCH

Metro-Goldwyn-Mayer Production.

Director of Photography: Ray June, A.S.C.

One could hardly say this diverting comedy is typical of the very best work Ray June, A.S.C., can turn out, though it is photographed with much of the usual June deftness and skill. From what we saw on the screen, we'd be inclined to suspect June's hand had been forced here and there by a director or executives who were for the moment more interested in speed than in the all-around production quality for which MGM is famous. Photographically, it shows in little things one usually doesn't see in one of June's pictures: a little lack of smoothness in diffusion continuity here, a trace of uneven halftones there, and so on.

On the other hand, there is photographically a great deal that is excellent in June's work in this film. His general treatment of the players is pleasing—especially in the instance of Kay Francis—and his compositions and set-lightings are excellent. The real photographic highlight of the picture, perhaps, is the surrealistic "nightmare" sequence, which is not only amusing, but unusually interesting pictorially. For that matter, "The Feminine Touch" is very diverting

entertainment from start to finish, though dramatically it could have stood some cutting to good advantage.

## LOUISIANA PURCHASE

Paramount Production (Technicolor).

Directors of Photography: Ray Rennahan, A.S.C. and Harry Hallenberger, A.S.C.

How you will like "Louisiana Purchase" depends on how you like your Technicolor. If you favor it strong, after the fashion of the "Mississippi river water" upon which Victor Moore becomes boiled in the picture, you'll like "Louisiana Purchase." But if, on the other hand, you've seen enough other Technicolor films like "Blood and Sand" and "Blossoms in the Dust" to favor a more restrained artistic use of color, Paramount's favorite musical will probably disappoint you.

In any event, you'll agree that Directors of Photography Ray Rennahan, A.S.C., and Harry Hallenberger, A.S.C., have done their part of Technicoloring the film excellently indeed. Their lighting-treatment is necessarily largely in high-key "comedy" lighting—sometimes done with a good deal more contrast and sparkle than is usual in conventional Technicolor technique—and graced surprisingly by several really excellent, low-key effect-lightings in which excellent use of color is made. They have dealt excellently with the players.

Compositionally, "Louisiana Purchase" is delightful. The spectacular settings afford innumerable opportunities for spectacularly eye-filling compositions, and Rennahan and Hallenberger take full advantage of every pictorial possibility. The opening sequence, and especially the following one in which the "Louisiana Belles" very decoratively sing the picture's denial of "any resemblance to any places or persons, living or otherwise," gets the picture off to a novel start both dramatically and pictorially.

On the other side of the ledger are the settings and costumes which are publicly blamed on Raoul Pene du Bois, who seems to have been above the art supervision of the dependable, studio-wise Hans Dreier and Robert Usher, to say nothing of Technicolor's Natalie Kal-mus and Morgan Padelford. Mr. du Bois very evidently set out to create "a riot of color." In this, he was wholly successful; but in designing a background for motion picture entertainment, he was more nearly a failure. Repeatedly the background, with its use of strong colors and baroque designs, forced itself into the foreground of the viewer's attention. Such settings might, when used on the stage, where the audience has a wide field of view and can select whatever it wishes to see or to ignore, perhaps be considered decorative; but on

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## DODGING JAPAN'S CAMERA-CENSORSHIP

By FRED C. ELLS

THIS afternoon of December 17th, 1941, I was happily engaged in trying out the beautiful unearthly effects of various colored gelatins on a seascape. You know, just experimenting and figuring until the right combination would justify fifty cents' worth of Kodachrome. The scene of my activity was the end of the Santa Monica pier. Fifteen or twenty minutes passed, but still no shot, when a young gentleman of 22 or so, in a natty outfit donated by a grateful government, stepped up. He wore a metal soup-plate, inverted, and a pleasant, but apologetic smile. He intimated politely that inasmuch as his present employers were at outs with a certain oriental people some 6,000 miles due west west by north, photography of Santa Monica seascapes couldn't be allowed, either now or in the indefinite future. So I carefully folded my gelatins, and silently stole away.

A few minutes after I arrived home the telephone rang. It was the Editor of *THE AMERICAN CINEMATOGRAPHER*, suggesting that an article on photographic censorship in Japan would be timely and instructive. Somehow, he caught me right in the mood.

I think I can qualify as an expert on Japanese photographic censorship, which for years has been the most severe in the world. From 1925 to 1940 I took pictures constantly there, and never got locked up, in spite of the expectations of all my acquaintances. That is a record few foreign photographers can equal. Accurate knowledge and discretion was

the secret of my success. Not that I ever got to feeling cocksure over my photographic success. You don't when, as I did during the last few years of my stay in Japan, you know there is at least one plainclothes member of the Japanese Gestapo trailing you constantly!

In 1925 the sole legal restriction on photography was in certain specified Fortified Areas. Each of these areas was outlined on maps, and warnings were plainly posted in both Japanese and English on roads and paths leading into such areas. The restrictions also applied to sketching and surveying. Resident photographers naturally knew where these forbidden areas were, and if they had a modicum of brains, avoided them. But frequently a tourist would get caught, and lose some hours explaining all about it to the police. In such cases the films would be confiscated. Usually, but not always, the camera would be returned.

There were several pitfalls into which the unwary visitors fell. First, there were not many signs, and the newcomer didn't notice them when passing in an automobile. Chauffeurs and other civilians were too polite to protest to the visitor, but would turn the information over to the police after the damage was done. Then, second, the visitor might be outside the area, but unwittingly shoot over the line. Thirdly, in some places inside the areas photography was winked at, because of a popular subject located there. An instance is the great

bronze Buddha at Kamakura, perhaps the most photographed object in all Japan. But woe betide the wight who snapped a shutter outside that temple compound. And then, there was always the smart guy who tried to get away with something. For him, no sympathy.

Under this Fortified Area restriction I was questioned twice by the police. The first time I was five miles outside an area—I had found a Japanese making geta (wooden shoes). It was a subject I wanted badly, and after the usual preliminaries, shot fifty feet or so. Of course a crowd gathered, and just as I was leaving, a cop arrived on a bicycle, complete with saber. He wanted to know what was going on. After some discussion he agreed that taking the workman was all right, but not to take anything showing the road or mountain contours. I confused the issue by asking whether the workman was a carpenter or a cobbler. While the cop was thinking that one over, I departed hastily.

The second time I was well outside the sacred line. I was making a picture of rice culture. One of the interesting aspects was the fertilization of the fields. The farmers came into the cities, where there is very little modern sewerage, and go from home to home collecting nightsoil from the outhouses and privies. In the spring there is a steady stream of handcarts loaded with this odorous booty outward bound to the farms. It took me some time to get the shots I wanted. The next morning a policeman arrived at the office, and asked me what I was doing, surveying without a permit. Someone had seen the camera on a tripod, taken my auto license number, and reported me for surveying. When I explained that I was taking pictures, there was no further inquiry.

Sometimes it was possible to get a permit to photograph inside a Fortified Area, and the procedure was rather interesting. I once needed some shots of fish, and the only aquarium in the Yokohama area, where I lived, is in a Forbidden Zone. The director, a famous marine biologist named Dr. Eri, was educated at Yale, and had studied his subject at Wood's Hole, Massachusetts. Dr. Eri is one of the most cultured gentlemen it has ever been my good fortune to meet. He was most helpful, and wrote to the Commander of the district.

In due course I received a number of forms to fill out, giving my name, why I wanted the pictures, the type of equipment, the exact day and hour the pictures were to be taken, and a great many other points. I sent these off and in a few days was requested to come to the army headquarters at Yokosuka. I had an interpreter with me, and at the headquarters we picked up an army officer.

At the aquarium we found a plainclothes-man and a private soldier. A careful record was made of all the film I shot, and at the beginning and end of each roll I had to shoot a few identifying frames of the faces of the plainclothes-man and the soldier.



Mind you, every inch of the shooting was inside the building. At the end I was allowed to keep the film for processing. When it returned from the laboratory I took my projector and screen over to Yokosuka, and a board of five officers reviewed it. They pronounced it harmless, and gave me a certificate to that effect. Note that my permit was good only for that one appointment. A Japanese could get a permit good for several months.

Two Fox Movietone friends of mine, Alexander and Tappan, were taking a 35mm. news short of the race track one day. They had a policeman assigned to watch them, but because the track overlooked the Fortified Area, and in spite of the police guard, the film was confiscated, much to their disgust.

As the nationalistic spirit grew stronger in the early 1930s, new restrictions appeared. The National City Bank of New York wanted pictures of the big buildings around Kobe and Osaka for some publication, and got into serious difficulties over them—in spite of the fact that every publication in Japan carried such shots regularly. Then it became unlawful to take pictures of any waterfronts and seashore anywhere, railroad stations, bridges, power plants or any sort of industrial plants, power lines, police or military activities of any sort, any public buildings, or any shot from a height of over 100 yards. So many visitors got in trouble that the steamship lines forbade visitors to take cameras ashore, and any foreigner seen carrying a camera would be trailed. It was at this point that I switched from filming agriculture to insects and flowers. It was much healthier, I found, if less adventurous!

An officer was stationed at each of the various film-processing plants, and in theory at least, reviewed every inch of film developed. Any roll containing any shoreline or other identifiable physical feature, or any "distress subject" reflecting on the dignity of a sensitive people with plenty of distress available, would be confiscated without hesitation—not only the offending footage, but the whole roll—and occasionally there would be follow-up inquiries as well.

As the situation tightened, a law was passed forbidding the exportation of exposed but unprocessed film. This ruined the foreign newsreel business, as the processing done in Japan was of inferior quality, and further, spot news would have whiskers by the time a subject could be processed and passed by the censor. At one time there were camera crews working for Fox, Hearst, Pathe, and Paramount, as well as occasional free-lancers on short subjects. All of them were squeezed out one at a time.

At present the newsreel business in Japan is run by the big newspapers, like the Asahi Shimbun, or the Nichi Nichi Shimbun. They have large staffs, all equipped with Bell & Howell Eyemos, spring-driven type. Several of these photographers have been killed in action

in China. They each put out one reel a week, and the runoff is one hundred copies. Processing is by the tank and rack method. Before the "China Incident" in 1937, practically all the film stock used in Japan came from abroad. I understood that the locally manufactured films and papers were coated with imported emulsions. With the tightening of exchange regulations, the local manufacturers began turning out emulsions. These were extremely contrasty, with no range of tone, and the sensitivity was exasperatingly uneven. American news-photographers, like "Life's" Paul Dorsey, have related that the most prized present they could give a Japanese officer (practically all of whom use cameras) was a load of genuine American-made film.

Japan's factories turned out several types of still and cine cameras, usually close and not always licensed copies of American or European types. A favorite type of still-camera, for instance, was a Japanese-made composite of the Leica and Contax designs. In the professional movie field, I understand their studios often used painstakingly Japanese-made copies of the Bell & Howell and Mitchell. In the amateur field, most cameras and projectors bore startling resemblances to familiar American types. It was somewhat disconcerting, though, to run your films on a Nipponese projector of hybrid design which might combine an imitation-Bell & Howell lamp-house on a synthetic Ampro movement and carefully-reproduced Eastman or Victor base!

Naturally, all films, amateur or professional, had to pass the police censorship before being publicly shown. "Publicly shown" means any projection outside of a private home. There were brokers who made a specialty of performing this service. First, all titles, dialogue, and printed matter appearing in the picture had to be written out in detail in the original language. Then this material had to be translated into Japanese, and bound into a book. This book was then duly stamped with official seals. There had to be one copy of the book for each print of the film, and the book had to accompany the print at all times, so that it would be immediately available to any police official who desired to check a performance. I've often wondered how some of the language in our musical comedies and gangster pictures must sound when converted to Japanese—I'm sure our slang must have been a headache to the translators. I also must mention that the prints also bore an embossed impression, pressed deeply into the celluloid, of the censorship seal.

The censorship cut out protracted love clinches, and anything that might reflect on the dignity of any ruling head of any government—especially an Axis one. Imagine what a circus they could have had with "The Great Dictator"! The censorship wasn't uniform, and changed its ideas from time to time. For example, one of my films showed a temple

gate with a Japanese lantern bearing the formal sixteen-petal chrysanthemum design of the Imperial family. It passed the censorship the first time, but was cut out of a copy that was made later. However, they didn't come back to ask about the first copy, so I still have the scene. The nightsoil cart picture I mentioned above passed the censorship, as apparently that had become so much a normal part of Japanese life that it was accepted without much thought as to its effect on a foreign audience.

For an amateur, there was a further step. To show a film in a school, church, or other semi-public place, not a theatre, it was necessary to have a special permit from the police, giving full particulars as to the film, the censorship number, the name of the projectionist, and many other bits of information. A diagram of the hall was required, with all windows and exits, and a diagram of the streets in the vicinity, and indications as to the points of the compass. If an admission was to be charged, that had to be given. After the performance, a further report had to be made, and the amusement tax paid. All in all, it was a bit discouraging to amateurs.

I got the above information the hard way.

One day I was asked by the principal of the International School in Yokohama, to show one of my pictures. This school was privately owned and operated by the resident foreigners, and had no connection with the Japanese school system. The picture was to be projected by my wife in the afternoon. She ran off the first reel, and when she tried to start on the second reel there was no current. She thought she had blown a fuse and that finished the show.

The next day the police came to me and requested that I come down to the station with the film, which I did. The film was taken away from me, and about two weeks later I was called to the procurator's office. The procurator is a combination of judge, jury, and prosecuting attorney. I was not allowed to use my translator, or have a lawyer. After some questioning, I admitted that I had projected the film without a permit, but pleaded ignorance of the law. So after signing a confession, and promising never to do such a thing again, I was dismissed and recovered the film.

Later it developed that the janitor of the school was one of the ultra-fanatics, and had pulled the switch on the show and reported to the police. The police knew there was nothing to the case, but didn't dare not to go through all the motions, as otherwise they would be open to accusation of favoring foreigners. The janitor got fired on charges of inefficiency as soon as the truth came out.

Now the peculiar part of this is, that I showed my films for years before the above incident in Japanese public schools, and in assemblies of foreigners, and then got caught. After that I had to insist on a police permit before a projection before any group. But the Tokyo amateur cinema club had longer programs

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A big tin dishpan, some wire and lamp-sockets makes an excellent, wide-angled floodlight at low cost.

THE way the Nation's War Effort must necessarily cut into the availability of cinematerial of all kinds is likely to prove an asset to the cine-gadgeteer. Of course "store-bought" equipment is and always will be more efficient than the home-built variety; but if your dealer's shelves are giving an imitation of Old Mother Hubbard's cupboard—well, just join the ranks of the gadget-builders, and you'll be surprised what workable equipment you can tinker up for yourself.

Take the matter of photographic lamps, for instance. Photoflood bulbs and similar high-power light-sources are still comfortably available, but the supply of lamps to use them in is dwindling as their manufacturers find they can better turn their men and machinery to turning out aircraft parts and similar wartime products. Yet we still need lamps to light our home-movie interiors. So let's make some for ourselves! All we'll need, in most cases, is some of the cast-off junk which collects around any household, a dime-store lamp-socket or two, and a good supply of ingenuity. For tools, a pair of tin-snips, a dime-store drill, and maybe a screwdriver and a pair of pliers.

Exhibit "A" in this discussion is a twin-photoflood floodlighting unit which cinefilmer Bob Teorey of the Los Angeles 8mm. Club built from kitchen cast-offs and the outlay of a whole nickel in cash. For reflectors (big enough to take a No. 1 Photoflood) he used a pair of worn-out, lightweight aluminum saucepans which had passed the days of their kitchen usefulness. (Maybe tin would be more patriotic today, what with aluminum needed for defense; but the principle's the same.)

## Lamps—Without Priorities!

By WILLIAM STULL, A.S.C.

Teorey cut a neat hole in each saucepan, at the spot where the handle originally joined. Into this hole, he screwed a metal lampshade-fitting—you know, the metal part that covers the 'works' of a lamp-socket—purchased for a nickel at the dime store. Into this fitting, he put a discarded, but still serviceable electric lamp-socket.

To the bottom of this fitting, he fixed a short length of gas-pipe, also culled from the salvage-bin. Being hollow, the tube permitted him to run the wire feeding his lamps down the middle of the gas-pipe.

Drilling suitable holes in the bottom ends of his two gas-pipe arms, he mounted his lamps on a simple swivel-joint made from a bolt and a couple of bits of strap metal.

This, in turn, he mounted on a stand which, in his case, was salvaged from the supporting base of an old dressmaker's form. It could, of course, be made just as well from an old music-stand or, as I've sometimes done, by fitting a small metal block beneath the swivel-base, and drilling a ¼-inch, threaded hole in the block so the lamp can be supported by your second-best tripod.

So you want a spotlight? Well, Teorey made a very fair one out of a discarded coffee-percolator and the lower

half of a discarded double-boiler. The body of the lamp was made by cutting away the bottom of the percolator and fitting it into the double-boiler. The holes that took the handle-bolts on the original utensils can usually be lined up so they'll hold a bolt that will hold the two parts of the lamp together.

You'll need ventilation, so leave the hole in the percolator which originally took the upper bolt that held its handle, and snip off the spout from which the coffee was originally poured. Flatten out this little piece of metal, and you'll have a flat piece which will make an excellent light-baffle when placed over the old pouring-opening, and held in place by bolts and small separating-washers.

For a lens, remove the glass top of the percolator and substitute the plano-convex lens of an old flashlight, mounted curved-side out.

There are several ways of mounting the light-globe inside this spotlight. Teorey used a standard Photoflood, which he mounted endwise in the lamp. He attached his lamp-socket to a length of brass tubing—discarded curtain-rod, if I remember aright—which in turn passed out of the lamp through what was originally the bottom of the double-

boiler, moving through a set-screw collar soldered to the end of the lamp. He focused his lamp by sliding this rod in and out.

But using a Photoflood in a spotlight—any spotlight, home-made or "bought'n"—has one drawback: it gives a very soft beam; you can't make it give a sharply-defined circle of light. But you can rig a spotlight like this one to utilize a small, clear-globe lamp like those used in the "Dinky Inkie." This globe, as you probably know, is a standard 100-Watt or 150-Watt projection-type globe identical with those used in most minislide projectors. It takes a small, bayonet-type socket. And it isn't much trouble to get one of those sockets from, say, an auto-wrecking yard; they're identical with those used in headlights, etc., on many older-model cars. Fasten that to a wood or metal base, into which you can screw or solder the brass tube that moves your globe into and out of focus. In using a globe like this, by the way, it is important to line things up so the filament of the globe is held pretty well centered with respect to the center of your lens.

And with this, you'll have a fair, home-built "dinky." Of course, with the old type plano-convex lens, it won't be as efficient as a commercially-built "dinky" with its scientifically-designed



Fresnel lens, but it will work well enough, anyway.

If you want some extremely simple floodlights, save the tinfoil that (so far, at least) wraps your cigarettes, candy-bars, and chewing-gum. It makes a fine reflecting surface.

Next, take a good-sized piece of medium-weight cardboard, and make your reflector. There are several ways to do this. If you cut out the cardboard in the shape of four truncated triangles—that is, triangles with their points cut off square across (as in sketch B)—you can make a square, tapered reflector. If you cut it as shown in the sketch, (A), you can curl it to make a cone-shaped reflector.

For that matter, you can cut the same shapes out of light sheet-metal—say tin—if you want a more permanent reflector.

Now, cement or glue your tinfoil, as flat and smooth as you can get it, on one side of the cardboard or tin that is to make up your reflector. Coat the other side with white enamel. Now, you'll have a double-purpose reflector. Used with the foil-covered surface inward, you'll have a reflector that casts a fairly strong beam. Used with the white-enamelled surface in, you'll have a reflector that throws a much softer, flatter light.

If you use cardboard, you can fasten your reflector together with wire staples or with the split rivets used to fasten legal papers together. If you've made tin reflectors, you can bolt or even solder the segments together.

The smaller opening is of course fitted around an ordinary lamp-socket, in which you use a Photoflood bulb. You can attach simple clamps for mounting the lamp if you want to, or you

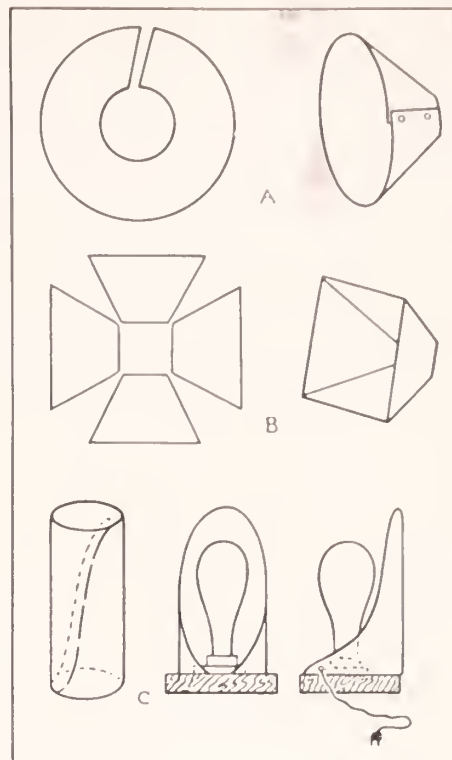
can make a simple, wooden stand by fitting a wooden upright—say a 1x1—with four wooden braces at the bottom, either simple ones like those you used to hold the Christmas-tree upright, or triangles of plywood mounted one on each side of the upright. Screw your lamp-socket to a short, wooden arm, about 18 inches or two feet long, and drill a series of holes in the upright to which you can bolt the arm to get your lamp at any desired height.

There's one type of lamp which, though extremely useful in either professional or amateur interior lighting, just isn't commercially available at all. It is a small lamp which can be placed on the floor behind furniture, etc., to light up walls and the like. But you can easily make one. Rather, you can make yourself a pair of them.

The raw material is a large, tall can such as your wife buys tomato or pineapple-juice in. Cut one of these cans in two, as shown in the sketch, making a sort of S-shaped cut so that you get two pieces, each including one end and about half the sides of the can. For safety's sake, you'd better turn down the edges, so you won't cut your hand when you grab hurriedly at your lamp!

Then, mount this on a wooden base, a little bigger than the bottom of the can. Inside, mount a standard lamp-socket, and run the feed-wire out through a convenient, small hole low down at the rear of your reflector. This will give you a lamp, suitable for either a Photoflood or a projection-type bulb, which you can hide handily on the floor behind furniture, to light up walls, and produce separation between your set and the furniture or actors.

There's another type of lamp which



isn't available commercially, but which is very handy. You might call it a super-floodlamp. Often in filming interior scenes, especially on today's super-fast types of film, you'll want something to provide a fairly strong general-lighting over a wide area without tying up the stronger, narrower-angled floods and spots you'll use for modelling and highlighting effects. I made a lamp of this type several years ago which, equipped with up to 6 Photofloods, will give a broad, even illumination of about the same intensity as a single Photoflood in a regular commercial reflector; but instead of concentrating this illumination in a relatively narrow angle of about 60 degrees or less, this spreads it over an angle of almost 150 degrees. With it, you can provide general lighting on a whole room, and use your other lamps to build up the desired intensity on your players.

The foundation of my lamp is a big, tin dishpan. When I made the lamp, getting that dishpan was about the hardest part of the job; tin wasn't in style, though I could get any number of big, expensive aluminum or enamelware ones. Today, tin kitchenware is very much in style again, with the object of conserving aluminum for the defense industries, so that part should be easier. You can suit yourself about dimensions; my dishpan is 17 inches in outside diameter, tapering to 11-inch diameter at the smaller end, and 6 inches deep. It cost me \$1.35. There's room in it for six Photofloods—either No. 1's or No. 2's—without crowding and with ample ventilation.

These lamps are mounted in bakelite  
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Cinefilmer Bob Teorey of the L. A. 8mm. Club made these floodlights (below) and this spotlight (above) from household junk.



## Meet Laraine Day -- Professional Cineamateur

By WILTON SCOTT

**T**O some people, the business of being a rising young film-actress means the relatively simple matter of knowing your lines and doing what the director tells you to, with no questions asked. But not to Laraine Day. She feels that to be a successful actress, she must know something, at least, of the *why* of all that goes on around her to put her image on the screen. Why the director tells her to play a scene thus and so—why the cinematographer employs this angle or that lamp—why the film-editor assembles the individual takes as he does. In short, the practical details of movie-making, as apart from movie-acting.

And being a smart girl, as well as an attractive one, she realizes that the answers to these questions don't come out of theory alone, but out of practice.

Watching someone else do them in the studio isn't enough. Neither is asking questions.

So she has set out to learn the answer the hard—and lasting—way: by doing it all herself. A few months ago she bought herself a 16mm. camera, and, as she puts it, enrolled in the college of cinematic experience.

Now, a movie-star with a home-movie camera is no novelty in Hollywood. Plenty of them have them, and grind out occasional shots of the baby, or of tennis at Palm Springs and bathing at Malibu. But Laraine Day isn't that kind of a movie-maker. You may have fun turning out haphazard cine-snapshots, she reasons: but you're not likely to learn much from them that will help you when you step out in front of a big 35mm. camera on a studio stage.

So she has organized what might be called a cinematic "Little Theatre" group for the express purpose of seriously attacking the hardest kind of home-movie making: producing scenario pictures. "Creative Pictures, Inc.," her group is called, and they really make pictures. It's a democratic group, too. With Miss Day as Director-Cinematographer, the personnel of Creative Pictures, Inc., includes young men and women of every walk of studio life—there are secretaries, messenger-boys, prop-men, aspiring young players—all bound together by a common interest in learning what makes movies move.

All told, there are thirteen "regular" members of the Creative Pictures group. They form the nucleus of a production staff which expands almost overnight to thirty or forty enthusiastic volunteers when a picture is in production.

Last summer they made their first picture, a comedy. "We took what we thought was the safe, conservative course," Miss Day will tell you. "That is, we chose a story that was all exteriors. But—it was a comedy, which is, we found, one of the hardest things a group of amateur actors and technicians can tackle. Especially when your picture is, as ours had to be, a silent picture.

"We're not very proud of that first attempt. But it taught us a lot about screen comedy—timing, tempo, and all the other things that are so important. And it showed us plenty of technical things we—and particularly I, as director-cameraman—had to learn before tackling our next picture.

"But we had a lot of fun making it, too. We had things organized as carefully as any studio location unit—organization is half the secret of doing a good job in any sort of amateur dramatic work, you know. We had certain people told off as a transportation unit; others as a wardrobe and prop staff; and others—they were the really important ones—as our commissary, to see to it our hungry filmsters were well supplied with a picnic lunch at noon!

"During the actual shooting, we all had to 'double in brass,' and do whatever was necessary. I guess in that it was a good deal like the early days of the professional movies, for sometimes when our actors weren't needed in a scene you'd find them holding a reflector, or carrying the camera, or almost anything.

"As I've directed a number of 'Little Theatre' plays, I had the job of directing our picture, and photographing it, as well. That experience gave me a new respect for the few people who have had the courage to direct and photograph a professional picture! Each assignment—direction and photography—is really a full-time job. And as if that wasn't enough, in one scene we ran out of 'extras'—and the rest of the group pressed me into service in a 'walk-through' bit!"

When the picture was completed, "Cre-

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**I** DON'T think anyone ever bothered to work out an exact definition of what a professional cinematographer means when he speaks about "effect-lightings." So it's no wonder home-movie enthusiasts often ask us if "effect-lightings" are something exclusively professional, or if they can be used shooting 16mm. and 8mm. interiors at home.

Certainly they can! What's more, they should be, for if you use them in their proper place they can do a great deal to make your interiors seem more natural, and take away the impression that somebody just set up a pair of lights and said, "Let's shoot a movie."

Just to get the record straight, my impression of the meaning of the term "effect-lightings" would run something like this: it's any type of lighting which attempts to reproduce the effect of the illumination you'd actually see in any particular room or place under the conditions of the story, as apart from the smooth, overall illumination of a conventional lighting.

That, you may say, covers a lot of territory—but so do effect-lightings! They can range from the most extreme and obvious instances like night-effect interiors in a mystery-story, where the room is in total darkness except for a beam of moonlight splashing through a window, to the rather less obvious effect-lightings which might reproduce, say, the effect you'd normally get in your living-room at night, with the illumination coming from one shaded lamp on the table and a reading-lamp by your pet armchair.

From the amateur's viewpoint, the really beautiful thing about this whole business of effect-lightings is that they can very easily be done with modern amateur cameras, film and equipment. You don't have to have a set-full of professional spotlights, and so on, though I'll admit a baby spot or a "dinky" or two helps. The one thing you really need is an eye capable of seeing the natural effects you want to reproduce.

Let's take that living-room shot I mentioned a minute ago. With the fast films, like Eastman's Super-XX and Agfa's Triple-S, available for 16mm. and 8mm. use today, it's a cinch to put a shot like that on your home screen. All you have to do is slip a Photoflood into the table-lamp and the reading-lamp in place of the regular globes—and there you are. You'll get the same effect photographically that the regular globes gave you visually: a spot of bright light on the person beside each lamp, surrounded by a fairly bright glow of light, falling off into shadows in between. The difference is that the level of the lighting has simply been raised to useful photographic intensity.

Now, it's possible you may not want the shadows to go absolutely black and empty between these two highlight-areas. If that's the case, just take one (or, if it's a large room, two) of your photographic floodlighting units and put it fairly high and well back—possibly several feet behind the camera—so that it



## What Do We Mean When We Talk About "Effect-Lightings?"

By PHIL TANNURA, A.S.C.

throws a soft flood of light all over your scene, lightening up those shadowed areas. You may sometimes have to use more than one of these "filler" lights, so that you'll get the desired exposure everywhere in the shadowed area. For safety's sake, it's probably best to take individual meter-readings on objects, not only in the highlight-area, but also in those shadow-areas, and adjust your "fill-in" illumination so that it's uniform, and also so that it is in correct ratio to the highlight-illumination.

Just what that correct ratio is depends on several factors, most important of which are your own preferences, and the characteristics of the film you use and the processing it receives, so the best way of determining it is by making a practical test or two. Begin with a lighting in which your meter tells you the shadows are getting, say, half the light the highlights receive. Then, keeping your highlight-illumination constant, make two or three further tests, each time reducing the "filler-light" illuminating the shadows a bit more. Once you've determined this ratio, it will hold good as long as you use the same type of film; but if you switch to another make or type of film, you'll probably find you'll have to repeat the tests, due to the differences in contrast, shadow-speed, and so on between different emulsions.

When a professional wants to make one of those extreme night-effect lightings in which the inside of the room is dark except for a beam of moonlight

coming through a window, he usually sets up a big spotlight (an arc, if he can get it) outside the window. That's hardly practical for the average amateur. But you can often get a very similar result by letting a beam of real sunlight double for the spotlight. Expose for the people or things in that beam of direct sunlight, and keep the rest of the room fairly dark, and you'll get the "effect-lighting" you want. It often helps if you use a slow, rather contrasty type of film for this, so you won't find yourself getting exposure in the shadow-areas where you don't want it.

Another simple type of effect-lighting is shown in the illustration. With the strongest illumination coming from the fireplace, it gives the illusion that the people were illuminated by a comfortable fire. Actually, of course, the source of light was a Photoflood, conveniently hidden in the fireplace, just out of the frame. If you want a flickery effect to simulate real firelight, a good idea is to get a low-based kerosene lamp, turn the wick fairly high, and burn it, with the chimney removed, directly in front of the Photoflood in the fireplace. Without its chimney, the lamp will give off a high, flickery flame, burning with quite a lot of smoke. Being in front of your real source of light, it will give you an excellent flickering effect.

Some kinds of effect-lightings can simplify photographic problems for you, and suggest something that didn't ac-

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While he was in Junior High, he had managed to get together enough money to purchase a small 16mm. camera at an auction; before he could make pictures with it, he had to start saving for money enough to get it repaired. By the time he was able to use it, it had become rather an expensive camera. However, he battled along with it, applying his analytical mind to the study of its possibilities, and its limitations, with the result that when he started to make pictures, he knew his camera. The subjects he made were of a documentary kind, a visual explanation of an important class subject, and he, likewise, became popular as the "Movie Professor."

Encouraged, he commenced to lay aside small sums of change toward the purchase of a better camera, one not so limited in its application, and with which his growing knowledge and interest could expand with better results. He

you asked me to show you what it was that made the wheels go 'round in the old camera? Well, that first camera of yours was just as much a mystery to you then, yes, I'll say more of a mystery, than this new camera with all its accessories."

For a moment, Joe's expression was blank. He didn't want to contradict Bill, he relied on him, his advice had always been good, and Bill had taught him what he knew of the basic principles of photography. He had taken many hours out of his time to demonstrate the principles he advanced. Bill was a professional cinematographer; what they called an "Ace Cameraman," he made his living through his knowledge of his profession; he should know. Joe always turned to Bill when he didn't feel secure in his own amateur-cine knowledge, and he did it now when he said.

"Bill, I realize there is much more to this camera than the fixed-focus box I've been working with; its set shutter opening, set speed, and small lens-aperture. This new camera is the first violin of the orchestra, not just a whistle of one note. I know I'll not be confined to just a few hours of bright daylight for operating time as I have been. With this new camera I'm going to be able to go places and do things, that is, after I know the camera."

"Right." Bill became almost affectionately confidential. "Joe, with this new camera you can produce photographic results equal to those of scientific professionals; but you're going to have to study; a lot of study and research by yourself. Your problems are your own. The answers to them will have to come out of your own mind. According to the study and research you put into the thing you want to accomplish, will be the degree of your proficiency. The results you can achieve? The sky's the limit!"

Joe got serious. The dazed expression had faded away. "You know what I'm goin' t' do Bill?" Now it was Joe who was confidential. "Bill, I'm not goin' t' try t' make a picture with this camera until I have sat down with it, lived with it, for a month, or longer if need be, getting acquainted with all its features, till I know what every button, every dial and lever, and all the marks are for, and what happens when they are manipulated. And the lenses! Look at this one. *f*:1.9. Why, I can almost make pictures in the dark with some fast film behind it! Isn't that a beautiful piece of jewel-glass? And look at these other two lenses—"

"Yes," interrupted Bill, "A wide-angle, and a three-inch telephoto. With that telephoto, like Mohammed, you can bring the mountain to you. Joe, when these lenses need cleaning, for the love of Mike, don't breathe on 'em and then rub 'em with a piece of cloth, or the end of your necktie: many fine lenses have been ruined that way. Never blow your breath on a lens to clean it! Use the

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# Getting Acquainted With Your New Camera

By ALVIN WYCKOFF, A.S.C., D. Sc.

**H**E held the lucky number! He won the prize!

The thing had fascinated him. It had been in his dreams at night disturbing his rest. During the day he turned a deaf ear to the silent voice that kept giving life to the hope that the number he held would be the winning one.

The announcer for the great Olympic Club drawing was calling the name of the winner of the Christmas contest and awarding the prize.

There it was, posted across the bulletin board in great black letters that smiled at him; his own name. Now he could hear it coming out of the loud-speaker as the announcer's voice blared it out loudly. Joe was embarrassed. Heads turned to look at him as the announcer hailed him. "Come up and get it Joe." Then there was a lot of hand-shaking. Joe began to feel what it was like to be the winner of a Cine-Kodak Special, complete with tripod, three lenses, cases, and all the accessories.

Since he graduated, two years back, he had been holding down a small job that paid just enough to get him over the "bumps" with a little change to play with. Since the early days of Grammar-school, photography had been his absorbing hobby. Now, that hobby was to germinate and grow into an avocation. Perhaps later—well, who knows . . . ?

knew what he wanted; it was pictured in his mind 'till it tormented him, at times. Now he had it. He held it in his arms, almost afraid to touch it. Dame Fortune had not only knocked at his door, she had opened it wide!

He was interrupted; jarred out of his vision-dream by the voice of Bill Haskins. Genial Bill, he was called by his friends, was saying things to him he had not heard; now he listened.

"Well Joe," said Bill. "That's a beauty, isn't it? Now, you can make real moving pictures! S'pose you'll ditch the old box that's carried along the beginning of your photographic career?"

Joe looked up, his face beaming with real joy. "Hello Bill. Gee, but I'm a lucky guy! Guess I'll have to learn all over again. These gadgets 'n things, focusing lenses, fade-out and dissolve lever, tripod with a panoram and tilt head!" Joe picked up the old camera, worn and dull. He looked at it affectionately. "No Bill. I'll not throw it away, I'll keep it. Maybe use it for testing. You see Bill, this old box has been a companion on a lot of joy-occasions—sometimes a headache too, but it'll be good to experiment with." Putting it down on the bench, he lifted the new camera out of its case, tenderly. "It's a beauty all right; now if I can only use it correctly—"

"Joe," broke in Bill. "Remember when



# Professional Advice On Making Films Easy To Edit

By HAL HALL

Former Editor, "American Cinematographer," and film-editor on many professional and amateur travel films.

**A**BOUT a year ago a man came to me and asked me to edit approximately five thousand feet of 16mm. film he had shot in a foreign country. He explained that he wanted it prepared as a lecture-film; that he planned a two-hour lecture and wanted the film edited to run that length.

Quite naturally, before I could either quote him a price or decide whether or not to do the job I had to see it on the screen. I'll never forget the feeling of sadness that surged through me when the last foot had been run and the man turned to me and asked me what I thought of it.

You see, this man had explained to me that he had quit his job in California, had used up all his savings and spent a year traveling and shooting the film. He was back, practically broke, and had found visions of becoming both famous and financially well-off by using it on a lecture tour. This man was just a rank amateur movie maker, and that was what he had brought back after a year of hard work. He had brought back five thousand feet of the same type of stuff that all too many of our ardent home-movie makers bring when they return from the annual vacation or a trip to foreign lands.

Of course, I had to tell him that his stuff was terrible. I can't forget the look on his face when I told him that I couldn't take his money on an editing job on that material. He was just about the sickest-looking individual you can possibly imagine. His money gone, a year of effort wasted. And all because he made the same mistakes most of our amateurs make. The only difference was that this man wouldn't be showing his stuff to a lot of bored visitors, but the amateurs would. Yes, sir, to every guest who came to their house. Tell me, if you can, what can be worse than having to sit politely for two hours and look at pictures that are so bad they make you want to scream?

The editor has asked me to relate, from my editing experience, some of the most glaring mistakes amateurs generally make when shooting travel film. That is why I started out by telling of the man who made a lecture-film that couldn't be saved. I'll tell you some of the things he did and didn't do, with the hope that some of you may profit by his mistakes.

In the first place, practically ninety percent of the material he photographed which might have been good subject-matter was shot at such a distance that

you wouldn't know what it was unless he was on hand to say:

"Away in the background there is a machine-gun. Those specks behind it are the machine-gun crew. They were really very effective in the matter of defense. When the enemy met them he knew he had met something."

But, dear reader, motion pictures are supposed to be visual things. The man had neglected to get close and interesting shots of the machine-gun and its crew, although he explained that he had permission to do anything he wanted. He just thought it was exciting to see the gun in the distance as he was filming, but he never thought to move up and get something an audience could see.

That's what a lot of amateur movie makers do on the summer vacation. They drive along the country road, for example, and see some farmers loading hay in the hayfield. They sit in the car, turn the lens in the general direction of the hayfield, and shoot an agonizingly long amount of indistinct long-shot footage. When they get home their friends will see a title flash on the screen saying: "Haying," and then they will squint and try to see how haying is done, while the enthusiastic maker of this masterpiece will try to explain.

If the amateur would shoot his long-shot, then get out of the car, climb the fence and really go to work making close shots of the interesting work from various angles he would come out with an interesting little sequence that would really mean something.

The man who made the lecture-film had hundreds of feet showing bombing planes flying thousands of feet in the air. They were so high they were merely specks on the screen. He explained they were flying to bomb a city. Following this he had some scenes of a town after the bombs had hit. But there were no scenes of the bombing. There weren't even scenes of people digging in the rubble. No action. When I asked him where were the scenes showing the bombs falling, houses crashing to the ground, etc., he rather blankly remarked that he had not made those.

Amateurs, please, please, get action, and get it as close as possible. I saw a 16mm. picture not so long ago of the tearing down of a high smoke stack. The amateur had made nice close-ups of the men putting dynamite in chinks at the base of the stack. He then showed a long shot of the stack. And next he showed a closeup of the mass of bricks after the stack had fallen. But he had



Top: a long-shot like this may be pictorial, but it doesn't tell you much about the Army's combat-cars. Middle: a closer-shot like this is better. Bottom: But it takes a close-up like this to put over the punch! Top photo by John L. Herrmann, A.S.C., F.R.P.S., F.R.S.A.; lower photos, official photos, U. S. Army.

been so excited when the dynamite went off that he forgot to make the really interesting part of the picture—the crashing of the stack!

I was editing some film that a wealthy amateur had made in Africa some time ago. It was supposed to be in the elephant country. It was, but all the elephants were so far away they looked like blotches. In order to make the stuff presentable to his friends, we had to go out and buy some stock—shots of elephants close enough so you could tell they were elephants.

Another very general error is that amateurs forget when they are photographing moving objects, such as parades, and the like, that the objects should continue to move in the same direction. I mean if you see the men in a parade marching by heading to your right that is the way you should make

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# AMONG THE MOVIE CLUBS

## Blackouts

We notice with regret that practice blackouts and the generally unsettled conditions following America's sudden entry into the war seems to have blacked out the regular December meetings of a number of amateur movie clubs from coast to coast. We hope this cessation of activity is only temporary, for continued activity on the part of America's movie clubs can serve two valuable purposes. First of all, we need the relaxation a hobby like movie-making can provide, if we are each to carry on at his best under wartime strains. Second, and no less important, America's organized movie amateurs can serve their country importantly in many ways. Among them are such projects as aiding in the exhibition of government-made Civilian Defense Films; the production, in co-operation with local and national authorities, of such films, specifically adapted to suit local needs; and public showing of outstanding amateur-made films as a means of raising funds for the U.S.O., the Red Cross, and similar patriotic organizations.

In this latter connection, **THE AMERICAN CINEMATOGRAPHER** gladly offers to any Amateur Movie Club the use of any of its extensive library of International Prize-Winning 16 mm. and 8 mm. films, waiving the usual restriction that these films may not be exhibited for paid admission, in any case where the proceeds are devoted to raising money for any of these patriotic funds.

It is worth noting that in England, where blackouts and wartime precautions are the real thing, Amateur Cine Clubs and Societies are carrying on in spite of the war. The December issue of "Amateur Cine World," just received, publishes a list of nearly two dozen such groups reporting activity, and further states that the Federation of Cinematograph Societies reports a full list of film-bookings up to April, 1942, and that the Institute of Amateur Cinematographers is reviving its annual Contest and also its film-production unit.

If England can do it, America's amateurs certainly can, too—so **CARRY ON AMERICA!**

## Sound In Philadelphia

The December meeting of the Philadelphia Cinema Club featured two sound-on-film pictures made by members of the Club. "Paradise," by Member Robert Henderson covered a number of nationally-famous processions, featuring the bands and especially the drum majorettes. Member Leon Bardfield showed the difficulties of making and showing home movies through the medium of sound. Both films were of interest because of the development of amateur movie sound-effects and showed con-

siderable progress with non-professional apparatus.

Mr. and Mrs. Francis M. Hirst showed two 8 mm. Kodachrome films, one on "Yellowstone Park," and the other on "Glacier National Park." Both were very finely done, with a keen appreciation of composition, lighting and subject-matter. In addition to the usual views of geysers, falls, canyons and mountains associated with the Northwest, Mr. Hirst was successful in securing some rare pictures of animal and plant life and some very interesting and intimate close-ups of Blackfoot Indians in Montana.

B. N. LEVENE, President

## Contest In Indianapolis

The December 17th meeting of the Indianapolis Amateur Movie Club was the announcement of the results of the Club's Annual Contest. Winner in the Scenario Division was "Lathe Project," (180 feet 8 mm., black and white) filmed by J. W. Sovine. In the Documentary Division, "Meridian Hills Activities," (320 feet 16 mm. Kodachrome) took first honors. Judging was done by the Editor of **THE AMERICAN CINEMATOGRAPHER** and the Officers of the Los Angeles 8 mm. Club, who gave "Lathe Project" a score of 83.7 out of a possible 100%, and "Meridian Hills Activities," 82.7. The runners-up were, in the Scenario Division, "Photographers' Model," (125 feet black and white 8 mm.) by C. E. Luethge (63.8), and "Repousse Work," (100 feet 8 mm. black and white) by J. E. Willenborg (72.8) among the Documentaries.

ELMER M. CULBERTSON,  
President

## L. A. Cinema Elects

The December meeting of the Los Angeles Cinema Club featured the Club's Annual Election of Officers, and also the Annual Contest. Officers for the Club's 1942 Season are: A. A. Anderson, President; Jacques Shandler, Vice President; and Raymond B. McMillan, Secretary-Treasurer. Committees will be announced at the January meetings.

The Club's Annual Contest brought out a greater number of excellent films than any Contest the Club has held in a number of years. Winners were, Retiring President William Hight, First Prize; Guy Nelli, Second Prize; and Earl Memory, Third Prize. Additional Awards went to more than a dozen other contenders, some of whom had entered films which, like Fred Ells remarkable film on the praying mantis, were so completely away from the usual run of movies that they richly deserved special classification and Awards.

JACQUES SHANDLER, Secretary.

## Utah Amateur Club

Highlights of the December meeting of the Utah Amateur Movie Club included a demonstration-talk on Titling by F. K. Fullmer, the ever-popular "I Have a Problem" question-and-answer session by members of the Club's Technical and Advisory Committee, the screening of member C. A. Thomas' 1940 Contest film, and, as the feature of the evening, the Western Premiere of "Minnie's Mince Pie," furnished through the courtesy of the Gopher Movie Club of Minneapolis.

The Club has completed plans for its Annual Contest, to be held at the Club's March meeting. Three Divisions are contemplated: Class "A," Class "B," and a special division for Musical Films. Each Division is to be judged separately, by outstanding judges outside the Club. February 1st is set as the deadline for entries.

TED GUERTS, Secretary.

## San Francisco Dines. Nominates

Scheduled for the December meeting of the Cinema Club of San Francisco was the Club's Annual Banquet. Screen entertainment was to include two outstanding films by Allyn Thatcher. One was "Ice Follies," which won the recent "Ice Follies" Contest, and the second one, "Summer Vacation." Both are in 16 mm. Kodachrome, with sound-on-disc.

The Club's Nominating Committee announced the following slate of nominees for the Clubs 1942 officers. For President, Rudy Arfstein; for Vice President, Anthony Kleyn; for Secretary, Mrs. John Seitz; for Treasurer, Fred Youngberg; for Directors (three to be chosen) Dave Redfield; John Smurr; L. J. Duggan; Fred Wells and L. M. Perrin.

JOHN B. SMURR, President.

## Tri-City Banquets

The Tri-City Cinema Club of Rock Island and Moline, Illinois, and Davenport, Iowa, held a Banquet-meeting December 15th. President Raymond Schmidt acted as toastmaster, and several members recited amusing or interesting camera-experiences. Program-Committee Chairman Tom Griberg prepared special Club End-titles in Kodachrome, and distributed them to the members.

Member John Hoffman of Moline, filmed the banquet in Kodachrome, making a series of shots of the guests—more than seventy in number—seated at the various tables. The evening was a great success.

GEORGIA T. FIRST, Secretary.



## SHOES

Scenario-travelogue, 200 feet 8mm. Kodachrome.

Filmed by John E. Walter.

One of the chief weaknesses of most home-movie travelogues is that while they may be long on scenery, they're short on story-interest. But here's one which cleverly combines a thread of story with excellent scenic photography. And, for added measure, the story is cleverly humorous—one of those "it happens in every home" affairs.

The film itself is a record of a three-day Fourth-of-July holiday trip to the mountains. For story-interest, cine-filmer Walter didn't content himself with mere occasional haphazard shots of himself and his wife walking through the scenery. Instead, he opens the picture with the two deciding where they'll spend their holiday, closing the sequence with the wife's announcement that on the trip she'll wear her new sport sandals.

The rest of the film deals with the inevitable sorrows of wearing openwork shoes on a hiking-trip. Walter gives us plenty of very excellently-photographed scenery—some shots showing extremely high pictorial ability; but he dishes his scenery out in small portions, so that before any scenic sequence has a chance to become boring, it is supplanted by another, natural story-sequence, culminating finally in a deftly surprising "O. Henry twist."

In making the scenic shots, Walter has dared to use his camera at times when the rule-book would pronounce it taboo. He's filmed campfires, excellently impressionistic low-key shots of a campfire smoke rising through the trees, backlit effects on whitewater rivers and steaming falls, and occasional shots made late in the day, with very pictorial, long shadows.

Our only suggestions would be that he could have saved footage by cutting some of his spoken titles into the middle of the close-ups showing the character speaking, and that in one instance—where he has two titles reading "We pitched our tent—" "—and loafed around the campfire" he let too much footage elapse between the two titles. The scenes showing the pair returning from the hike also came unexpectedly, as there had been nothing previous to indicate they'd started their return.

## OUR HERO

Scenario; 200 feet 8mm. black-and-white. Filmed by L. B. Reed.

This is a surprisingly amusing little comedy, filmed by the members of a Naval Reserve Aviation Squadron. Detailing the adventures of a more or less

intrepid explorer who finds he can't be a hero in Africa, and joins the Navy, the film is considerably better than the average amateur comedy, and in some ways reminiscent of the professional Abbott and Costello films.

There's a sequence which makes clever use of professional camera-tricks when the bandy-legged hero, after deciding he's too exhausted to scale a high cliff, suddenly sees a lion—and changes his mind. The lion is cleverly cut in by means of a shot made in San Diego's famous barless zoo. We'd suggest, however, that this scene would be more effective perhaps if cut in ahead of the scene in which the hero "does a take" and his topee flies off.

Some of the scenes, especially in the middle and latter sequences of the film, seemed a bit on the underexposed side. But when you consider the circumstances of the film's making, and the laughable results achieved, this hardly ranks as a major flaw.

## PHOTOGRAPHER'S MODEL

Scenario Film; 125 feet 8mm. black-and-white.

Filmed by C. E. Luethge.

This is a praiseworthy attempt at a family scenario picture, and misses fire largely because of technical limitations in film and subject-matter of a key sequence, and by unsure handling of the titles. As a story of a day's work for a little girl who poses for commercial photographers, the idea and basic treatment of the picture is clever, and a bit out of the ordinary. However, too much footage is devoted to showing the photographer at work in his studio, and because of the disparity in speed between the 8mm. film and the film in the still-man's camera, practically all of this footage is lost in underexposure, so that it seems repetitious and unintelligible. Now that a much faster 8mm. film is available, however, this sequence could easily be remade, and the picture improved 100%.

The titling was rather awkward. A picture like this needs spoken titles; none were used here. And such titles as were used, were rather dull, explanatory ones, and incorrectly cut into the picture. Sometimes there was a definite repetition between an explanatory title and pictured action which really told the same story. For example, there is a title giving the name of the still-photographer's studio. This is followed by a shot of little Betty and her mother driving up to the studio, with the camera panning over to the studio's name-plate. In this instance, the title could have been eliminated. It would, also, have been better to handle the action this way: Close-up of the studio's name-plate, then pan over and down to show either the

car driving up and mother and daughter entering, or merely the two people entering the door, leaving the audience (which has already seen them drive from home in the car) to assume they had already parked the auto.

In the same way, the title at the end of the picture, referring to the advertisement in which the girl's picture appeared, could have been eliminated. It would have been much better to cut quickly from the scene in which the mother sees it in the paper and calls the girl, to an insert of the ad itself. Similarly, early in the picture the title "Studio call," could have been replaced by a spoken title (set off in quotation-marks) making the mother say, "Yes, I'll have Betty at the studio at 2:30 this afternoon."

## THE MAGIC CLOSET

Scenario; 125 feet 8mm. Black-and-white. Filmed by W. D. Garlock.

The story of this diverting little picture is told by its opening and closing titles "Once upon a time was a man who had a movie camera. And he also had a wife—" and "What's sauce for the goose is applesauce for the gander." In between are 125 feet of comedy action sure to strike a responsive note in the heart of any married man who owns a camera.

The technical treatment is excellent. Garlock's lightings are unusually effective, and convey much more of an impression of naturalness than is the case with most home-movie interiors. His continuity and editing, not to mention the acting of his players, are excellent.

We might suggest, however, that the "punch" of the picture would be stronger if he could show, early in the picture, a shot of the inside of the closet, showing it crammed with the husband's photographic equipment. This could be cut in either at the time he places his mysterious package there, or when, later, his wife finds it. Also, while the pantomime is clear, and there are a fair number of spoken titles, a few more titles would help the picture quite a bit.

## REPOUSSE WORK

Documentary; 100 feet 8mm. black-and-white.

Filmed by J. E. Willenborg.

The filmer here had a subject definitely out of the ordinary, and has filmed it quite well. But he needs considerably more explanatory titles to make the meaning really clear. He gets into his picture rather too suddenly; most people don't know what repousse work is in the first place; this should certainly be established at the outset. Thereafter, more titles should be used, to make each step clearer. Some of the footage seems

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# HERE'S HOW

## Making Fades

On interior scenes, I make fade-outs by stopping down the lens of my camera as far as I can. But on exteriors, I can't do it, because my lens won't close completely, and I can't get my fade-out to go completely "out." How can I get around this difficulty?

William H. Morrison

The simplest way to do it would be to use a fading-glass or one of the automatic or semi-automatic fading gadgets like the Harrison "Rotofade." However, if you can't do this, we'd suggest that you get a .100 Neutral Density filter. This is a colorless, neutral gray, and does not change the color-rendition of your scene, so it can be used with either black-and-white or Kodachrome. Its factor, for all types of film, is 10. Shooting outdoors with this filter on your lens you will have to increase the exposure 10 times to get a normally-exposed picture: if you're shooting in an  $f:16$  light, you'll have to open up to  $f:5$ , if it's an  $f:8$  light, you'll have to open up to  $f:2.5$ . This will give you plenty of latitude to make a lens fade-out, even though your lens won't close completely.

## Diffusion

I'd like to reproduce in my own movies some of the slightly diffused effects I see in professional pictures. Can this be done in 16mm.?

F. R. Benson

You can use diffusion in either 16mm. or 8mm. as well as you can in 35mm., with one difference: your diffusion in either of the substandard sizes must be a great deal more delicate than in 35mm. filming, if the picture on the screen isn't to appear badly "fuzzed." A bit of extremely fine, black lace netting, or even a piece clipped from a very sheer silk hosiery, can be used for some diffusion effects. If you want to use commercially-available diffusion filters, we'd recommend for substandard camerawork something on the order of the Scheibe diffusing filters No. 1/128 or No. 1/256.

## Double-exposures

Can I make some double-exposure titles, with a moving background behind my title-lettering, with my 8mm. camera? I haven't got a wind-back.

Ralph Schirk

We haven't a wind-back on our own 8, but we've made plenty of double-exposed titles, and made them very easily. Our method is this: shoot the background scenes first, making a careful note of the starting-point where you loaded your camera, the amount of leader run off, and the footage of each scene. When this sequence is completed, expose the rest of your roll in the usual manner. On double-run 8mm. film, this gets your film back onto the original spool, with the original starting-point

out. Now, thread the same roll of film into your camera, and get the marked starting-point to the same place (usually the aperture or directly above it) that it occupied on your first take. Then run off the same footage of leader your notes show you you did before. Now, you're at the starting-point of your first background scene. Shoot the title-lettering that should go over that background, exposing the same footage as when you filmed the background. Then shoot the next title, and so on. When you've finished the title-sequence, put the lens-cap on your camera, and run the rest of the film through, preferably twice, so the roll is again "heads out," and the people at the processing-plant won't return it to you thinking maybe you've only exposed half the roll. That's all there is to it: if you balance your two exposures correctly, and keep accurate track of the footage on both takes, you should have perfect double-exposed titles. If you want a little leeway, you can fade your titles in a few seconds after the start of the background-scene, and fade them out similarly a few seconds before the background take ends. For your title-lettering, always use a black card with white letters, and split your total exposure between the two takes.

## Finder Parallax

Although I frame my scenes carefully in the finder, I notice that whenever I make close shots, I seem to cut off the tops of my subjects' heads. What's the matter?

Hal Petersen

The cause of this trouble is what is called "finder parallax." It is caused by the fact that your finder and your lens necessarily are spaced a little distance apart. When you are shooting a close shot, your finder naturally can't cover precisely the same field your lens does. Since you are cutting off the tops of people's heads, it is evident your finder is placed above the lens; if it were at the side, you would find in close shots you'd have too little room at one side of the picture, and much too much at the other. The remedy is to make allowance for this difference in lens and finder viewpoints when you shoot close scenes. You can do it mentally, if you like. Some cameras have a pointer or a scribed line to indicate what you should take as the correct top-line (or side-line) for framing shots under 6 feet from the camera. With a little experimenting, you can make such an indicator on your finder if you wish. Another remedy is to use an alignment gauge, of which several types are commercially available for the different types of cameras, so that you can swing your camera into a lining-up position in which the finder occupies precisely the position occupied by the lens in shooting position, and shows the same field. After lining up, you can swing the camera into shooting position,

and film your scene, disregarding the image you see in the finder so long as you don't have to pan or tilt your camera.

## Are Titles Necessary?

I believe that a good motion picture doesn't need titles—that the camera should tell the whole story without the intrusion of printed words. Some of the other members of our movie club believe otherwise, and argue my pictures ought to be titled. Can you settle the argument?

H. T. Winterton

You're both partly right. A really perfect silent picture would be one in which the camera told the story so perfectly there wasn't any need for titles, but it is almost impossible to make a picture that perfect. In all the years the industry made silent movies, we can recall only one picture—"The Last Laugh," photographed many years ago by Karl Freund, A.S.C.—which was successful without any titles other than the opening and closing ones. Even it would have been clearer had titles been used at one or two points.

You can easily settle the argument yourselves. Take one of your untitled pictures and show it to a group who have never seen it before, and who are preferably not familiar with its subject-matter. Note down every time you have to say something to explain what's on the screen, or when someone in the audience asks a question about it. Your picture will need titles at those spots, giving that particular information!

## Cellophane For Filters

Recently in "Here's How" you mentioned using gelatin filters. This makes me wonder if I could not get the same effect by using a sheet of colored cellophane over my lens. Is this possible?

R. K. Parker

It is possible, but we do not advise it except as an emergency measure. The colors in the better types of commercially-available photographic filters are scientifically compounded so they will absorb certain bands of the spectrum, and transmit others. You know, therefore, that a given filter will have a definite and predictable effect on a given film. Most important, you know precisely what its exposure-multiplying factor will be when used with a given film. Using colored cellophane, you have no exact information upon which to go: exposure-factors and color-correction can be determined only by tests. Also, remember that visual appearance is not necessarily any criterion of photographic effect: just because a piece of red cellophane looks to be about the color of a 23-A filter doesn't imply that its photographic color-transmission characteristics are anything like that of a 23-A; you might find, on measuring it with a spectroscope, that it actually has less photographic value than the visually much lighter, orange-toned "G" filter.

Remember, also, that a good photographic filter is made of either colored  
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## Get Acquainted With Your Camera

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best lens-cleaner you can buy and the softest lens-tissue.

"You've got the right idea about knowing your camera. Before you put film in it, set it up and get acquainted with it. Operate it without film until you can make it work almost without thinking of the mechanics of what you're doing; very much as you drive your automobile. Be thoroughly familiar with every feature of it. When you can do that, you can concentrate on the subject you want to produce, whether it be black-and-white or color, artificial light or natural light. With this camera, and the many grades of film, from low to extreme sensitivity, to choose from, you can photograph "Around the clock."

"Unlike your old camera with one set speed, and fixed shutter, this new one has five speeds as well as a "One-stop." With all those speed controls, and different grades of film, together with a variable shutter, and fast lenses, you've got the world by the tail photographically. Its wonderful to contemplate what you can achieve with such a camera.

"You made some real decent pictures with the old camera, considering its limitations. Now, as you have said, 'You can go places.' But where you went around with the old one in your hand, or found a solid base to set it on, you're going to use a tripod with this new one. Occasionally, when the right moment calls for it, you'll shoot this one from the hand too. But the better pictures, the professional ones, are shot from a tripod; that's why they're rock-steady.

"You're going to have to fight that urge to make panoram shots too. That panoram and tilt top invites a lot of troublesome pictures for your audience if you don't keep it under control. Many times, what could have been good pictures, have been almost ruined by too much waving around of the camera. There is rarely anything artistic, or good, to come out of a panoram shot; seldom does it improve the subject. The purpose of the panoram, mainly, is to follow some kind of important action close up, and then it must be done so expertly that the audience is unaware of the technique; the same applies to tilting too.

"There must always be a good reason for everything you put into a picture. Every action, effect, and sequence should be closely related. Don't use anything that doesn't help advance the story you are trying to tell. Plain, straight, sharp photography will leave a better impression in the mind of the observer than a lot of meaningless, disturbing effects. Good long-shots to introduce the locale, jumping into a closer interest of the scene with a normal, closer view, picking out the vital interest of the same scene with a good closeup, will always tell a good story convincingly. A good steady picture on the screen is a mark of the master cinematographer.

"With the five speeds your technique

widens. There are many advantages, to you, in those speed controls, through which you can devise intimate interest for your picture. For instance, with the "One-stop" you can interestingly reproduce the opening of a flower bud to the richness of its full bloom, either in black-and-white or color. Then there are the animated cartoons, titles and maps, insects that fill the screen, and no end of things that will make really unusual pictures.

"The 'high-speed' will let you slow down rapid motion to a rhythmic, liquid flowing motion of beautiful effect, or the study of driving a golf ball, diving, jumping horses, moving machinery, etc. With the combination of the telephoto, or long-focus lens, and 'high-speed,' the fast-moving parts of delicate machinery can be enlarged to fill the screen in slow-motion movement for intimate study. The 'Low-speed' is just the reverse, and many mirthful comedy stunts can be produced that will break the monotony of a serious sequence."

"Wait a minute, Bill." Joe was getting bogged down with so much to assimilate all at once; not that Joe was slow in grasping and stowing away knowledge, but because he wanted to take things in a steady stride, one step at a time. He was putting things back into the cases. "Let's go out and get a sandwich. Waiting for this drawing, and the excitement, has made me hungry. What d' you say we get together Sunday and you point all these things out to me. By that time I'll have absorbed some of the talk we've just had."

"All right, Joe, but take it easy. You've been a winner! Keep on being one! Here, let me help you carry some of those cases. You carry the camera. Give me the tripod. Come on!" END.

## Photography of the Month

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the screen, where the audience's attention must be concentrated for an hour and a half within the confines of a relatively small rectangle, such sets are distracting. In fully two thirds of the scenes, the settings, like an irresistible magnet, drew attention from the players to the background, much to the injury of the film's entertainment value. We'll wager that both Director Irving Cummings and the cinematographers would have had an easier task, and turned out better work, with less gaudy settings to compete with.

## UNHOLY PARTNERS

Metro-Goldwyn-Mayer Production.

Director of Photography: George S. Barnes, A.S.C.

"Unholy Partners" is the sort of picture which lends itself ideally to the modern technique of stopping down for increased depth. George Barnes, A.S.C., again shows himself a master of this style of camerawork. His use of it

must inevitably have been carefully planned, but the results on the screen seem so easily natural the average audience is likely to overlook the real skill that went to bringing these scenes to the screen.

Some of these shots appear to have been obtained through very effective use of the wide-angle lens, as, for instance, the very interesting angle-shot made apparently from slightly above the surface of the crap-table in the dice-game sequence. In others, the distorted perspective of such lenses detracts a bit from the perfection of the scene, and at times there seems a definite lack of roundness, especially in the background. His skill in composition for this increased-depth technique is, however, eminently well worth the study of any cinematographer.

A melodrama, the film naturally gives Barnes full opportunity to display his skill with effect-lightings. In these, he combines pictorial effectiveness and naturalness to an unusually high degree. His treatment of the players—especially Laraine Day and Marsha Hunt—is well up to his usual standard. The montage effects, especially those showing the growth of Edward G. Robinson's tabloid newspaper through its headlines and stock-shots of well-remembered news thrills of the 1920's, are another noteworthy point in the picture. Some of the process-work, especially the scene in the office of the sports-promoter, appeared definitely inferior to the rest of the production.

## THE SHANGHAI GESTURE

Arnold Pressburger Production, United Artists Release.

Directed by Josef von Sternberg, A.S.C.  
Director of Photography: Paul Ivano, A.S.C.

It goes without saying that any production with which Josef von Sternberg, A.S.C., is connected will be a photographically outstanding production, for von Sternberg, in addition to being a great director, is one of the world's greatest cinematographers. "The Shanghai Gesture" is no exception. It is most interestingly photographed by the Ivano-von Sternberg combination.

The opening sequence is softly effective, excellently planting the Shanghai atmosphere. With the following sequence, which introduces the gambling-house locale, the photography takes an abrupt transition, changing to a mood of crisp brilliance which excellently matches the diamond-hard atmosphere of the locale.

It is in the climaxing sequence of the New Year's banquet that the camerawork really tells, however. Much of the pivotal action of this sequence is told in a series of close-ups of the principals. Von Sternberg and Ivano have made these close-ups some of the most forceful ever screened, yet without any intrusively obvious straining for pictorial effect. It is without doubt one of the finest examples of mood-photography we've ever seen.



## Here's How

(Continued from Page 30)

glass or a sheet of dyed gelatin sandwiched between two pieces of glass. In either case, the filter is optically flat, and does not harm the definition of your image as a sheet of wrinkly cellophane might. Gelatin filters, when used professionally, are held flat in a metal frame. On all counts, we'd advise using the cellophane for wrapping, and sticking to the regular filters for photographic use.

## Home Movie Previews

(Continued from Page 29)

repetitious, as it shows the craftsman interminably hammering at the metal. Some of this footage, if it can't be explained in titles, could well be eliminated. This is especially so in the case of some scenes, in which the exposure could have been improved considerably. The picture ends rather too abruptly: we see the finished work compared with the artist's original free-hand sketch, but get no idea of where or how the piece is ultimately to be used. A few scenes showing this, if possible, would end the picture much more smoothly.

## Easy to Edit

(Continued from Page 27)

all your scenes. Then when you edit them and throw them on the screen the parade will go marching by just as you saw it, and just as it actually was. But many amateurs duck around and shoot them going to the right in some scenes, to the left in others, with the result that when the sequence reaches the screen you see the marchers going by you to your right and then, all of a sudden, you blink as you see them marching the other way. "Are they suddenly coming back?" you ask yourself, "or are there TWO parades marching on opposite courses?"

In the making of professional motion pictures the director is always careful to see that when a character enters a door in a long-shot and starts right toward a chair, in the closeup showing him taking the last step before sitting down he is still going right, and not left. Go to see a picture directed by a man like Ernst Lubitsch at your first opportunity, and watch how a master craftsman really handles his people in action.

Especially if you are shooting kodachrome, watch out for clouds that suddenly pass overhead, practically killing your light. Recently I had to sacrifice one of the most interesting scenes of an amateur's travel picture because after the first five feet of the scene dark clouds had hidden the sun and the pictures were so dark you couldn't see them. If that man had waited for the clouds to pass he would have saved his scene. He won't make the same mistake again. Neither should you.

Another cute little trick so many amateurs do is to stop the camera in the middle of some excellent action. Then suddenly start it going again. That makes the editing job, either for the amateur or a professional, if he hires one, a real headache. I recall seeing a home movie of a baseball game. The amateur cameraman had set up his camera and shot several feet of a close-up of a player at bat. The player was holding his bat right-handed and was swinging the bat out waiting for the pitcher to throw the ball. The cameraman stopped his camera to wait also, I presume. In the meanwhile the batter decided to shift his position and bat left handed. So what you saw on the screen was a right handed batter swinging, and then suddenly he was a left handed batter swatting the ball great guns. What you didn't see, and couldn't figure out, was how that switch came about, for the man with the camera didn't photograph the batter's switch-over.

Another very frequent mistake amateurs make is that of not shooting enough footage when they have a really important subject to shoot. Frequently in editing films for amateurs I have been heart-broken to find they had hundreds of feet of tripe, but only a few three- to four-foot flashes of the shots that really would have made their films worthwhile.

There is no reason whatever why any amateur who knows how to use his camera from the point of technicality cannot make just as pleasing, just as fine, travel-films as any professional. Just last month, for example, I had the pleasure of editing a film of Guatemala and Costa Rica made by a Los Angeles man who had never shot such a film before in his life. He shot it on kodachrome, and believe me when I say it is a better and more entertaining film than half the professional travel shorts you will ever see. It is so because the man has an unusual sense of composition, and he decided that he would take plenty of footage of the most interesting subjects, feeling that it is easier to cut them down than to find insufficient footage after he had come home. With all the skill of a professional this man made long-shots, then moved in and made the finest closeups you will ever find. And he didn't photograph a lot of uninteresting stuff. When he didn't see anything worth photographing, he just didn't make pictures. Perhaps that is one of the greatest failings among all amateurs. They feel that they must shoot everything—but at long range.

In closing, let me advise amateurs in making travel pictures to remember that the people who will be looking at their pictures on the screen in the living room will not be equipped with binoculars. They will have just normal eyes with which to see your film. So make it so they can see it. Don't shoot just for the sake of shooting. Wait for interesting subjects: then shoot them showing lots of interesting action. Never photo-

graph people just standing. Always have them doing something, and if they can't do something interesting, skip the shot. Just remember that ten minutes of really interesting scenes will make your friends want to come back and see more of your pictures, but two hours of boring long-shots will keep even your best friends away! END.

## Effect-Lightings

(Continued from Page 25)

tually exist when the camera was grinding. For instance, suppose you want to make a scene in which two people are riding in a car. For a day-effect, you can mount your camera somewhere out around the radiator-cap and shoot it with the car actually driving along, though it's rather inconvenient. But for a night-effect, even with today's fastest films, you can't get enough exposure to do this.

Instead, though, you can park the car somewhere that's convenient to an electric-light outlet, and let your lighting suggest that the car is moving!

Begin by composing your scene so that the camera sees *only* the inside of the car. Then be sure and pull down the shade over the car's rear window, so your lens won't be looking out through that.

Next, fix a clamp-on reflector unit either on the floor of the car, or perhaps clamped to the dashboard, so it throws a beam of light up into your actors' faces, giving an effect rather like the light from the instrument-board.

Now, put a considerably stronger light—a spotlight, if you have one—outside the car, shining in onto your players' faces from the side. It's got to be enough stronger than the illumination from the lamp inside the car so that it appears as a definite highlight.

By moving a large piece of cardboard with a vertical slot in it past this lamp, in a horizontal direction, you can, with a bit of practice, reproduce the effect you'd see in a real car as it approached, passed and then receded from real street lamps. Remember, by the way, that if your camera-angle is straight into the car, and your "effect" light is on the left side of the car, the moving beam of light should move from left to right to give a natural effect. Next time you go driving at night, just watch the way the beams of the street-lamps play across passengers' faces, and you'll see how easily you can simulate that effect for a home-movie effect-lighting.

The same general trick can often be used to suggest that the car is moving in the moonlight, along a tree-shadowed roadway. Only in this case, your "effect" light shouldn't be quite so strong, and the effect is produced by moving shadows instead of moving highlights. To make these shadows, you can use real branches, or pieces of cardboard cut out in irregular shapes that will make shadows suggesting branches. If you want to be downright professional about it, you can make a drum large enough to fit over



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your lamp, with the edge of the drum cut out to give these shadows, and then revolve the drum slowly (and horizontally, of course) about the lamp to make the shadows move.

Another useful trick of effect-lighting is used when we want to suggest that our actors are on a boat, or seated beside a romantic lake or stream. We put a shallow pan on the stage floor, with some pieces of broken mirror in it covered by about half an inch of water. Then we shine a strong spotlight downward into the pan, at such an angle that it reflects upward either onto the people, or into some part of the set. By gently shaking the pan, we produce a ripply beam of light which excellently suggests the reflected light from a lake or river's surface. You can work this trick just as well in your home films, too.

And finally, don't forget the most common "effect-lighting" of all—even though it's so common the professional never thinks of it as an effect. It is the trick of suggesting natural depth in a long-shot by using contrasted planes of highlight and shadow in lighting a set. If, for instance, you make a long-shot of your living-room, you might have the immediate foreground fairly well lit—say by a conveniently-placed stand-lamp—then a region of less illumination, then another highlight-region, and so on. This trick of semi-silhouetting the various planes of the picture will add depth to your shot, and make your scene seem much more real than if everything was fully illuminated. And—it's easier to light, and can be done with less equipment than a full lighting!

Once you've gotten the trick of effect-lighting from making a few experiments such as those outlined, you'll find the possibilities are almost unlimited, even in the simplest of home-movies. As we said at the start, equipment is by no means the most important element: an observant eye is the real essential. If you're really interested in effect-lightings, keep your eyes always on the alert: study the effect-lighting by which all of us are surrounded in our every-day life. And you'll find that with only a little thought and effort, you can reproduce most of them in your own home films, so that on the screen your pictures will become more natural—more real—than ever could be if you contented yourself with conventional, run-of-the-mill "full" lightings. **END.**

## Laraine Day

(Continued from Page 24)

ative Pictures" held its own Gala premiere. For a theatre, they used the Culver City Women's Club. A couple of "Dinky Inkies" served the purpose of the huge arcs that sweep the sky to call attention to Hollywood's professional premieres. Even the rite of making hand and footprints in the cement of Grauman's Chinese Theatre's forecourt was reproduced—this time in the form of a box filled with sand!

Since then, the "regulars" of the group

have been spending week-ends making tests, and trying out short sequences to prove their technique and ideas. Cinematographer Day proudly admits one of the great moments of her career was the week-end when she first tried the wind-back on her 70-E Filmo for making lap-dissolves and double-exposures—and then, in her home projection-room, saw that they actually worked successfully!

"We're just about ready to start our next production," she says. "Our technique is still a long way from professional, but we feel we've learned enough so we can go ahead with another full-length production without blushing too badly. This one is going to be a serious drama, and it will be our first attempt at interior lighting. Every scene in our script is an interior—and we expect to learn a lot about lighting, technically and artistically, from this picture.

"There's one great advantage to being connected with a professional studio, as we are. There are so many helping hand volunteers as soon as the folks learn we're really serious about our movie-making. We chose our story, for instance, and then one of the studio's best writers showed us how to put it into script form. The cinematographers with whom I work gladly offer advice on how to use my camera and lamps, and so on.

"So we're learning doubly. Already, I've learned why the director and the cinematographer make me do so many apparently inconsistent things on the set: when you see things through the camera's viewpoint, instead of from the other side of the lens, they're perfectly logical—and necessary if you want the scenes to cut together into a satisfactory sequence.

"Yes, this picture, too, is going to be silent. But we're hoping we can later synchronize it with sound-on-disc with my home recorder. And of course eventually I'd like to have a sound-on-film recorder, too, so that we can make professionally-synchronized sound-films.

"But that's well in the future. Right now, we're just a group of amateurs trying to learn enough about silent movies so that some day we can perhaps work out a few new ideas in treatment, and the like, that may eventually prove helpful professionally. And maybe—if our picture is good enough—we might submit it for review in THE AMERICAN CINEMATOGRAPHER'S "Home Movie Previews Department!" If our amateur work can get a good review there, we'll feel we've really begun to progress as 'professional cinemateurs.'" **END.**

## Lamps

(Continued from Page 23)

sockets from the dime store. Since the rim of the dishpan tapers, it's a good idea to grind the bottoms of the sockets so the lamps will stand fairly straight.

That's why plastic sockets are better for this job than porcelain ones, by the way.

The sockets are mounted radially around the rim of the dishpan, so that the big ends of the Photofloods converge toward the center, and are well toward what was originally the bottom of the dishpan, to minimize "spilled light." I simply drilled holes in the rim of the pan, and attached the lamp-sockets to it with bolts.

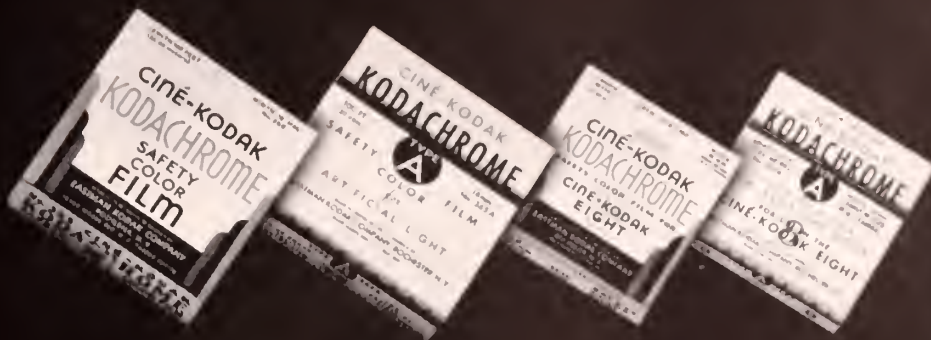
The lamps are wired together—in parallel, of course—with fairly heavy, single-wire cable. At one end of the string of lamp-sockets, I drilled another hole in the pan, this time at what was originally its bottom, but now its back, and passed the cable out through that, to a dime-store switch, also bolted to the dishpan. From this I ran some 25 feet of two-wire insulated cable to the usual two-prong plug which connects with the house current.

At the base of the lamp—any handy point along what was once the rim of the dishpan—I mounted a small brass block, properly tapered on one side to fit the taper of the dishpan's bowl, and fitted with a threaded, 1/4-inch hole so the lamp can be used on a spare tripod. And a tripod is a particularly good mount for this kind of a lamp, for its size makes it a bit topheavy, so that the spread of the tripod-legs is useful in holding it steady.

I've found it to be a surprisingly flexible unit. It throws a wide flood of fairly strong illumination which is just the thing for providing a good, even foundation of general lighting. It's fine for Kodachrome, and doubly so for the new super-speed films, for it gives you a good, basic exposure-level from which you can build up your modelling and highlighting effects with your other lamps, and at the same time not have to worry about having your shadows, back-walls, etc., go absolutely black. And since the globes in the dishpan are wired in parallel, you can adjust the intensity of its light over a very considerable range by simply using more or fewer globes as may be required, using all No. 1's, all No. 2's, or mixing No. 1's and No. 2's as may be required—all without making much change on the spread of light the dishpan throws. You'll find that feature is especially useful when you're working with super-fast films.

There's another variation of this same idea which ought to be useful with some of these fast films, for which you really need a soft, diffused general illumination if you want the most pleasing results. Take a good-sized pan like this, either of tin or white enamelware, or even in a pinch the top of a galvanized garbage-can. Use this as a reflector. Mount a photoflood facing it, in a smaller reflector, either home-made or commercial. The light from the Photoflood shines into your big pan, from whence it is reflected out at the subject, in the form of diffused, and therefore soft light. Mount the Photo-





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flood and the smaller reflector so they can be moved in and out with relation to the big reflector, and you'll have a very useful piece of diffused, indirect-  
equipment which will help you a lot in making pretty girls look pretty in shots made on fast film. Try it!  
END.

## Jap Censorship

(Continued from Page 21)

every month, and not an inch of the film was censored. Perhaps that was because Marquis Yamashina was the president, and hence the club was exempt! I never bothered to inquire, and probably wouldn't have found out if I had.

After the China trouble started, it became necessary to have another special export censorship to take any films out of Japan. That is, scenes that might pass for internal use might not pass for export. I had some thousands of feet of 16mm. when I came to leave in May, 1940. Some of it was near the distress ban. I couldn't see wading all through the official red tape, so my wife stuck the cans around in the dozen or so bags and trunks we carried, and fortunately no search was made before we left, so that my troubles with the authorities ended happily. But I'll admit I did breathe a little easier when the "President Coolidge" dropped the Japanese pilot outside Kobe harbor!

Most censorship is pretty dumb, but the Japanese weren't quite as thick-headed as you might think. I rather feel that a few recent shots of Japanese industries and power-plants might be rather welcome in certain quarters right now, and I have a further feeling that such information will be scarce and hard to locate. Every Japanese tourist in this country wore a camera. It was as much a part of his costume as his trousers. And not a Brownie, either. They had the best Germany could produce, and they used their Leicas and Contaxes ad lib. There will be, I suspect, no shortage of pictures of U. S. plants in the Tokyo War Office. Whether they will be of any assistance, of course, is another question. They might be.  
END.

## Focal Depth

(Continued from Page 14)

put over with sledge-hammer blows, or it would be lost. It often was, anyway, because some inadvertent motion, or even tonal contrast elsewhere in the field of view attracted audience-attention at the wrong moment.

But as screen technique developed, it was found that by bringing the camera closer to the person or object which was for the moment the center of dramatic interest, the audience's attention could be focused sharply on that one detail, excluding all others. Director and cinematographer could compel the audience to concentrate on the desired detail, even if it were only the flicker of an eyelid.

A very important factor in making

this possible is what some people have called a basic weakness of photography: the fact that lenses normally do not have perfect depth of field. In the long-shots, for instance, a star may have a whole room full of people behind her. In this angle, the normal lens' natural depth of field would show them quite properly behind her, well defined. But in the closer angles, as the lens was brought to closer focus, and probably a longer-focus objective utilized, the depth of field would not normally be sufficient to show this background in equally perfect focus with the star.

Far from being a dramatic liability, this is a dramatic asset. In the close shot, the interest is on the star; the background is dramatically subordinate, for the moment, at least. Normal photographic technique makes it visually subordinate, as well. It should be, I think, our aim to keep it so, in the interest of effective story-telling.

This is fully in keeping with the realistic effect, also. When you are standing close to a person with whom you are talking—close enough so that you see him in close-up angle—if your attention is really centered on that person, you cannot be aware of the details of the background. Your eye perceives the general pattern, of course; but it is a soft, rather out-of-focus pattern. You cannot consciously perceive its details unless you definitely take your eyes—and your attention—from your companion.

Undoubtedly there are occasions when, for dramatic effect, it may be necessary to show a player in a close shot, and at the same time show a well-defined image of some significant background-action in relation to him. But with the exception of a comparatively rare story like "Citizen Kane," which was planned for filming with just this treatment in mind, I think we can conclude that such occasions are well in the minority.

From all of this, I think we can very well conclude that we cannot lay down any all-embracing laws as to what does or does not constitute good cinematography. Not only the immediate visual effect of any scene, but its dramatic relation to story and action must enter into determining this. What is good camerawork under some circumstances, may be bad under others.

To me, the really significant aspect of the modern increased-depth technique is not the rather obvious fact that by making use of modern objectives, lighting and emulsions we can obtain a depth of field impossible by the conventional method of using today's fast lenses at full aperture. It is, instead, that it has given us something which rounds out our assortment of artistic tools, so that we have a better way of meeting the dramatic requirements of any story-situation. Let us hope that if the pendulum of cinematographic style swings back again toward increased softness, we will not forget this technique. For when we begin to believe there is only one way

to photograph a scene, regardless of its mood and action, we're in danger of losing the varied approach to varied conditions which makes cinematography an art, rather than a process of mere mechanical reproduction. END.

## Gregg Toland

(Continued from Page 15)

part in things not ordinarily connected with cinematography, why can't I help my pictures the same way by letting my cinematographer do the same thing?"

A few weeks ago, he signed what is reputed to be the biggest contract—in money and in professional stature, as well—ever signed by a cinematographer. And his reaction, as he expressed it to me, was not so much satisfaction on his own account, but the hope that once the word got around, some of the other members of his profession might have at least an entering wedge for making similar agreements, to the end that the camera profession as a whole might move up to a professional standing more commensurate with what it deserves.

He felt, too, that cinematographers, as a whole, are inclined to stay too close to their own work and problems. "Of course," he remarked, "we have a chance to get together at A.S.C. meetings, to talk over what we're doing. But I don't think that's enough. I'd like to get together an informal little group of cinematographers who are thoughtfully interested in their work, and plan things so that when any one of us was between pictures, we would make it a point to visit the others' sets—not just to come in and say hello, but to spend half a day or a day at a time, just watching how the other fellow works, reviving your own viewpoint by absorbing a bit of your friends'. I know I'd benefit by occasionally getting away from Gregg Toland's viewpoint and ideas, and seeing how, say, Arthur Miller, or Jimmie Howe, or Charlie Lang or Bill Daniels handled things. And I'm sure they'd benefit in the same way by visiting each other, and exchanging practical ideas that way."

But for the present, that idea of Toland's is distinctly in the future. This last year, with his close friend, director John Ford, he was one of the prime movers in organizing "Hollywood's Own" Naval reserve photographic unit. And with America's entry into the war, he changed quickly into uniform, gathered his crew about him, and reported for active service. As Lieutenant Toland, U.S.N., he is, with several of Hollywood's other outstanding photographic aces, "on location" with Uncle Sam—"for duration!" END.

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## Sun's Angle

(Continued from Page 13)

Equation of Time are found on many almanacs.

For convenient use in deducing accurate Standard Time from the Heliocator's readings all the above mentioned corrections for many important locations are easily incorporated in a table of figures making necessary but one simple addition or deduction. (Table No. 2).

The Heliocator was conceived and designed by A. J. Kookan, of the Warner Brothers Studio Art Department, and was constructed in the Studio's Camera Machine Shop under the supervision of Al Tondreau, in February of 1938. It has been successfully and continuously used since that date by this and other motion picture studios on sets and locations too numerous to be listed. **END.**

## Gun-Camera

(Continued from Page 11)

the lens electrically against the cold of the high altitudes at which modern planes fight.

Oddly enough, if the picture shows the sight directly on the target, the shot is usually a clean miss. It is clear indication to the instructor that the student has not taken sufficient "lead" in aiming his gun ahead of the swift-moving adversary plane. Only when the attacker is directly on the tail of the target, or when the two planes are flying directly toward each other, is such an aim good for a hit. In any other flight maneuver it is necessary for the gunner to "lead" his target, making allowances for the distance between the two planes, the speed at which his ship is traveling and the speed of the adversary plane. And it is in the measurement of the "lead" which the gunner takes, which gives the new equipment an important advantage.

Each frame of film has four indice (indication) marks midway on the sides, the top and the bottom of the frame. The camera is adjusted before takeoff so that the sight, an electrically lighted two-barred cross, coincides with these indice marks on the first frame of film. By this arrangement, if the sight shows the aim to be a certain distance ahead of the nose of the target, actually the guns of the attacking plane would be pouring a deadly stream of lead into the opponent.

The developed film is projected on a small viewer-screen, equipped with a mil scale of fine shadow-lines around the edges, so that the instructor can view the frame critically, measuring the amount of "lead" taken by the gunner, and with the known facts of the speed of both planes can determine whether the frame should be scored as a "hit."

After the instructor scores each strip of film, he can call in the pilot who made it, and point out his errors. Frequently the film is shown to a group of

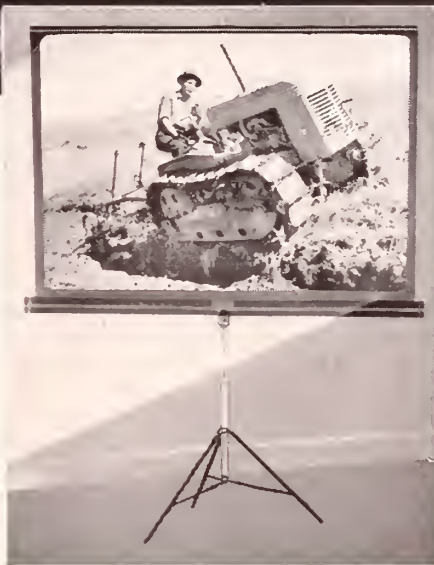
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pilots in the classroom on a larger screen also equipped with the mil scale, so that the whole group can benefit from the discussion of "hits" and "misses."

As a simple means of identifying each film with the pilot who shot it, the Wright Field armament branch technicians have suggested that each magazine be placed in an ordinary magazine-type home movie camera by the instructor, who takes a few frames of pictures of the pilot who is to use the film in his plane. The daylight-loading magazine is then taken out of the hand-camera and loaded into the GSAP camera for use.

Early in the use of gun-cameras it was learned that a principal advantage

to the trainee was to see the results of his training flight as quickly as possible after it was made. So Wright Field technicians and the camera manufacturers have developed a very nearly automatic processing technique, which the armament mechanics without expert photographic knowledge can use. Without divulging the details of the processing it may be said that it is of the reversal type, so that the film can be used in a projector immediately, and that it comes out of the process spooled on a reel ready to go into the projector in a very short space of time. Thus the student is enabled to see his pictures the same day he makes them.

Besides dog-fight training for indi-

vidual pilots, the gun-camera is valuable for other purposes. "Blind spots" on planes to determine how large a group

of fighters is necessary to attack a single large enemy bomber can be discovered, and the proper angles of approach for keeping as much as possible out of his line of fire.

First prepared for fixed mounting, the GSAP camera is being adapted for flexible gunnery practice also. Here the air corps engineers are confronted with a new problem, since today's flexible gunnery consists in the manipulation of power turrets, bristling with two to four heavy-caliber machine-guns, instead of the single, manually operated gun of the past. **END.**

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## Coordinating Meters

(Continued from Page 10)

I get a reading on it only slightly above 1.6—how much above depending, of course, on the amount of tonal separation I desire, and the shade of gray I want in the rendering of the wall.

In taking these readings, I make it a standard practice to hold the meter as close to the object upon which I am reading as possible without reading in my own or the meter's shadow. This is important, as when the cover-plate of a Weston "Master" is swung back for low-intensity readings, the meter's angle of acceptance is broadened to about 60°, or rather more than double its high-range angle. Speaking generally, it appears, too, that since the meter's color-sensitivity is quite reasonably close to that of the average panchromatic nega-

tive, the meter's eye automatically makes compensation for differing colors and reflective values in the subject.

If, as sometimes happens, one may want to go up or down the printing scale from the light normally favored, to obtain some special effect, it can be managed very easily and accurately employing this same system. We know that a difference of four printer-lights is equivalent to one stop difference in exposure. In the same way, on the Weston scale, one stop difference in exposure is equivalent to three segments or blocks on the meter's primary brightness-scale. If, for example, we wanted a scene to print on light 16 instead of light 12, we would mentally revise our meter-scale and know that an object we wanted black on the screen should be lit to a brightness of 3.2 instead of 1.6, and an object we wanted white, to 50, instead of 25, and so on.

In the same way, we sometimes find it desirable to stop the lens down for increased depth of field, rather than using it at full aperture. Knowing that each stop-value of exposure is indicated by three sections on the meter's scale, we can again modify our technique accordingly. If, for instance, we want to photograph a scene at  $f:3.2$  instead of the usual, wide-open  $f:2.3$ , we know that our previously-determined bottom- and top-scale meter brightness-readings will be moved upward from 1.6 and 25 respectively to 3.2 and 50, and the indication for a normal, middle-tone gray would be moved up from the first block over 6.5 to the first one above 13.

This same system of reflected-light measurement could probably be used quite as well for making key-light readings on the players. However, for normal effects the more conventional incident-light measurement is probably more convenient, as it is not always advisable to take a reflected-light reading with the meter so close to the player's face as is necessary for accurate measurement.

However, for accurate measuring of effect-lightings on sets or players, I have found this system highly accurate and convenient, with the added advantage that it enables one to coordinate his meter and its use to the processing of his negative so that the meter can be used with extreme precision. **END.**

## I-R System

(Continued from Page 9)

so that the picture of the entire set is in focus on the film.

Inasmuch as the focusing of the images of objects lying within any region in the set is dependent on the identifiable illumination of that region, it is clear that the image of each region can be controllably focused or softened to any desired extent regardless of the sharpness of focus of other regions. Thus individual objects can be changed in sharpness by altering or destroying the identifiable characteristic of the light falling on such objects. Accordingly, it is possible to produce what would otherwise seem to be an optical anomaly, namely,

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and as an example, pictures in which the foreground and background are sharply focused but in which the middleground is softened to any desired extent. The imaginative director and cameraman will readily see numerous dramatic and comic possibilities in so versatile a type of photography.

Multi-regional photography by the IR System is so novel a method of optical imagery that it naturally leads to some new optical concepts which, for convenience, should be given appropriate names and defined. This has been attempted in the following set of definitions of terms which have been found conveniently usable by the workers in that field. The list is incomplete since a considerable number of the concepts and methods involved in the IR System are beyond the scope of this paper, and accordingly the terms involved in those relations are not here included.

*Region.*—A portion of space symmetrical about the optical axis of an objective lens, based upon a central plane of sharp focus, and bounded externally front and rear by surfaces corresponding to a predetermined and maximum tolerable value of the diameter of the circle of confusion of the image of a point source placed upon such surfaces.

*Division.*—A portion of space symmetrical about the optical axis of an objective lens, based upon a central plane of sharp focus, and bounded externally front and rear by surfaces corresponding to a predetermined value of the diameter of the circle of confusion of the image of a point source on such surfaces, such value being less than the tolerable maximum. A division thus resembles a region but corresponds to less than the full depth of focus of the lens. Thus, there will be more divisions in a given object space than there are regions.

*Differential Focuser (briefly, Difo).*—An optical element placed suitably in relation to an objective lens and capable of rapidly shifting the back of focal plane thereof according to a predetermined time schedule during a picture-making period, but without the introduction of perceptible aberrational errors in the conjoint optical system.

*Space Spillover.*—The amount of light intended for illumination of one region (see above) which actually reaches another region (expressed in percentage of the light normally sent into the second region). The definition can also be applied to divisional space spillover.

*Time Spillover.*—The amount of light intended for illumination of a given region within a given period which begins before or lasts beyond such period of illumination (expressed in percentage of the normal illumination of that region during that period). This definition may also be applied to divisional time spillover.

*Space Registration.*—The deviation from exact registration during a complete exposure between the outer edges of opaque objects in a frontal region and the inner edges of the thereby-

occulted or masked outlines in a region further removed from the lens.

*Motional Registration.*—The deviation from exact registration during a complete exposure between the positions or outer edges of moving objects in a frontal region and the inner edges of the thereby-occulted outlines in a region further removed from the lens.

For convenience of reference it may be here added that space registration effects result from the relatively unfocused edges of frontal-region objects, acting as masks during the photography of further removed regions. Motional registration effects, on the other hand, result from the shifted edges of frontal-region objects in motion at the time of

photographing further removed regions.

In order to make the method of operation of the timed-illumination form of the IR System clear, a schematic arrangement is shown in Fig. 1 illustrating the illumination of the set. The central planes of the regions are indicated, but it should be remembered that these planes are somewhat forward of the geometrical center of the region since the back depth of field always exceeds the front depth of field. The front and back boundaries of the regions are also shown. The regional illumination in each case is seen to be directed into that region only, and with minimum space and time spillover. The camera shutter is replaced by a differential

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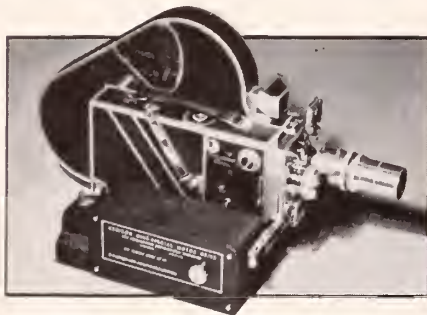
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focuser or diffo, which operates synchronously with the flashing of the lights in each region. This changes the position of the focal plane systematically so that each region is imaged in the same plane, namely, that of the film.

Considering Region 1, *F.P. 1* is the central or focal plane. Top lighting into the region is indicated by *TL 1*; side lighting by the oblique lamp *SL 1*; bottom lighting is indicated by the lamp *BL 1*; and back lighting for Region 1 by the lamp *BAL 1*. Similarly top lighting for Region 2 is indicated by *TL 2*, and for Region 3, by *TL 3*. The co-ordination or synchronizing of the illumination from these various lamps with the angular position of the diffo in the camera is schematically indicated by the dashed lines in Fig. 2.

It is obvious that there are many ways of focusing differentially and of timing the regional illuminations in synchronism with the phase or position of the diffo. Typical examples of these will be described further below.

The system shown in Fig. 1 leads to an interesting form of the curve connecting distance from the lens and diameter of the circle of confusion in the image of a point source at the corresponding distance. This multi-cusped curve is shown in Fig. 2. The positions of the central planes of the regions, the regional boundaries, and the maximum permissible circle-of-confusion diameter (taken as 0.002 inch for 35-mm film) are all indicated on the drawing. The left-hand loop corresponds to ordinary photography, while the complete curve corresponds to the increased depth of IR System photography.

By way of comparison, there is also shown on Fig. 2, as a dot-dashed curve, the depth of field of a lens of the same focal length stopped down to the point where it covers the same total or overall depth of field as three-regional IR System photography. It will be seen that the results of the two methods are even then by no means identical, or indeed equivalent in photographic effect, that is, even when the stopped-down lens is used to obtain equal overall depth. The IR System curve shows clearly three minima, corresponding to planes of sharpest or "absolute" focus. Thus, it is quite possible to place the central or most sharply focused plane of the rear-most Region 3 in the IR System at the back wall of the set or, alternatively, on the screen forming the back drop for rear projection composite shots (as described more fully below). In this way,

the important background is shown in completely sharp focus, as are also objects at several other distances from the lens—and, of course, all other objects in the field are depicted "in focus"—that is, within the acceptable limits of sharpness. In the case of the stopped-down lens, on the other hand, only objects at a single distance from the lens can be in absolute focus; and the important background, for example, is less sharp than this, although perhaps acceptable.

Using IR System photography, it is also feasible to divide the object space into more divisions than the number of optical regions it comprises. In that case, the curve corresponding to Fig. 2 will have as many minima corresponding to absolute focus as there are divisions, and thus there will be more minima than there are regions. Furthermore, in this arrangement, the maximum value of the diameter of the point-source image will always be less than the permissible maximum of 0.002 inch for 35-mm film, and this diameter and the corresponding sharpness are in fact under control with the arrangement in question.

Up to this point it has been tacitly inferred that the boundary surfaces of the various regions in IR System photography are plane surfaces perpendicular to the optical axis of the lens, as schematically indicated in Fig. 1. Such, however, is not the case. It is well known that the speed of a lens is always less for the edge of the field than for the center because, in the main, of the occulting effect of the lens tube and the interior stops for oblique passage of image-forming rays through the system. Thus the depth of field at the edges is greater than at the center. In consequence, the boundary surfaces of the regions are as indicated in Fig. 3. The central or focal plane of Region 1 is indicated by *F.P. 1*, and the dotted lines *F1* and *B1* are sections of the surfaces of revolution comprising, respectively, the front and rear boundaries of Region 1. Similarly *F.P. 2* is the central plane or Region 2, and the dot-dashed lines *F2* and *B2* represent the front and rear boundaries of Region 2; while *F3* is the front boundary of Region 3, of which *F.P. 3* is the central or focal plane.

It is characteristic of the IR System that the illumination of any one region shall be restricted with minimum spill-over to that region. From Fig. 3, it is obvious that oblique regional lighting in Region 1 can enter the region at considerable angles with the optic axis of

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the camera lens without violating the condition in question. Increasing obliquities are available for the illumination in the successively further removed regions, as indicated by *O.R.L. 2* and *O.R.L. 3*, respectively. A similar comment as to permissible obliquity of back lighting applies, as indicated by the back oblique regional light *B.O.R.L. 1* for Region 1 and by *B.O.R.L. 2* for Region 2, respectively. As a result of these flexible conditions, it proves to be conveniently possible to duplicate effectively any desirable light vector (that is, magnitude and direction of luminous flux) in each region. It is also interesting to note that the cross-hatched volumes of which the cross section are indicated as *1,2* and *2,3*, respectively, in Fig. 3 can be appropriately illuminated according to the IR System requirements by light from either Region 1 or Region 2 for the volume *1,2* and by light from either Region 2 or Region 3 for volume *2,3*. This adds to the convenience of regional lighting.

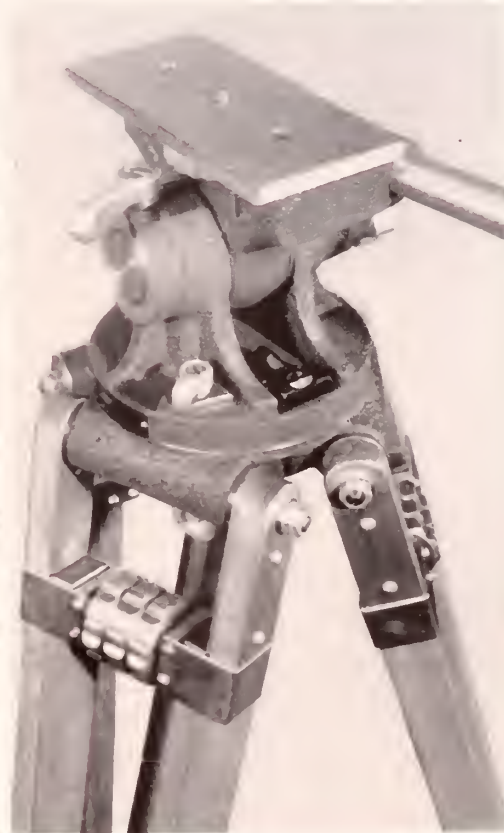
During the development of the IR System, comprehensive tables were prepared giving the regional central distances and forward and back limiting distances for an adequate variety of focal lengths of lenses used in motion picture work and also in television, for a considerable number of lens speeds, and for numerous working conditions covering an extremely wide variety of requisite depths of field. In their totality, these tables substantially eliminate any need for computation, reference to other depth-of-field tables, or delay in the application of the IR System to any desired circumstances and needs.

It may be added that under conditions where a one-shot in a close-up can be made only with some difficulty by ordinary photography, the IR System will permit making two-shots or even three-shots with the several actors back of each other at acceptable and convenient separations.

As was mentioned above, there are a number of available methods for the differential focusing of the lens in synchronism with the sequential lighting of the corresponding regions in the object space. The basis of one form of differential (diffo) is shown schematically in Fig. 4. The lens is indicated in each case by the vertical line through its center. Assume that  $O_1$  is an object in Region 1 and that the corresponding image is located at  $I_1$ . An object  $O_2$  in Region 2 produces an image at  $I_2$  closer to the lens. A diffo plate may be interposed in the path of the image-forming rays on their way to  $I_2$ . It is well known that the emergent rays in this case will be parallel to the incident rays but that the new image location  $I_1'$  will be displaced away from the lens by an amount depending upon the thickness of the plane-parallel diffo plate and its refractive index. By an appropriate selection of these constants, the image of  $O_2$  can be brought to the same location  $I_1$  as was the case for the object  $O_1$ . If the thickness of the diffo plate is less than

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a certain fraction of the focal length of the lens, no discernible optical errors will be introduced into the thereby displaced image as a result of the interposition of the diffo plate in the path of the image-forming rays.

A diffo is shown in Fig. 5 together with a corresponding aperture plate, both intended to replace the shutter in a certain standard form of studio camera, and without any modification of the camera mechanism or construction. The five diffo plates are visible in the right-hand portion of the figure, the thickest of these corresponding to the farthest region or background.

The procedure in using the IR System

under studio conditions may be briefly summarized in the following. This procedure markedly resembles that for ordinary photography. It is first determined what depth of field is desired, and also the distance of the foreground plane (that is, the nearest distance to the camera at which a person in absolute focus is to be located). The pre-computed tables of the IR System will then indicate for each focal length of lens and for each desired stop, the number of regions that will be required to cover the desired depth of field. Further, these tables will give the axial distance from the lens of the front and rear boundaries of the regions in question. The edge



boundaries can generally be approximately determined from these tables by a simple procedure which need not be here described. As an alternative method, of a more conservative sort, it is merely necessary to determine the depth of field of a lens of the focal length which is desired when stopped down to an extent equal to the normal lens aperture multiplied by the number of regions. Thus, if a 50-mm lens operating at  $f:2.8$  is used for four-regional IR System photography, as a first and conservative approximation the working depth will correspond to that of a 50-mm lens operating at  $f:11.2$  (and thus requiring sixteen times the previous amount of light on the set!).

Having thus determined the regional boundaries the lamps are set up to produce the desired key and modelling lighting for each region with minimum spillover into adjacent regions and reasonably good blending of lighting between regions. As a general rule this will merely require inserting the plug at the end of each lamp cable into a spider corresponding to the region which that

lamp will illuminate. The power supply and adjunct wiring to the spider are of course properly associated with the power supply to the camera motor, both as to frequency and phase.

The camera is set up at its appropriate location and checked, by means of the finder, for focus and depth of field. It may be added that the finder should preferably also be adapted to IR System viewing so that the cameraman has a correct idea of the depth of field in the corresponding picture.

In the event that background projection is used, it becomes necessary to time the projection of the background so that it corresponds with the regional location of the projection screen. Otherwise stated the light-source in the projection lamp house has a phase and duration appropriate to the region in which the screen is located. Thus the background image is in complete focus thereby avoiding one of the most serious limitations in such composite pictures, namely, the conflict in focusing, so to speak, between the actors in the foreground and the screen in the background.

Experiments have been carried out to judge the amount of spillover light which is permissible. Experience has shown that the sharpness of photographic focus is not appreciably affected on important parts of each regional picture if the spillover does not exceed 3 per cent. On the most important planes it is usually preferred to keep the total spillover at 2 per cent or less.

Extensive work with the IR System has made clear that the method is not a mathematical abstraction or a precision geometrical system under normal working conditions. It turns out to be a convenient method of operation with which liberties can be taken in practice and which can be used with the same latitude and discretion as any other photographic system. When first utilized, it is found strange to accept the IR System convention that light can not be poured through the set passing through one region after another but that the illumination must rather be handled

sequentially and region-wise, so to speak. The duplication of the existing lighting effects by modifying lamp locations and directions seems at first unfamiliar. However, after a little experience with the system all strangeness disappears and the simplicity of operation of the system becomes evident.

Fig. 6 illustrates a small set illuminated according to the IR System by means of shuttered incandescent lamps. As a matter of convenience, these lamps were mounted on pipe racks. The shutter of each lamp was regionally synchronized and operated in synchronism and suitable phase relation to the camera and diffo drive. It was also possible to take pictures according to standard photography on this set-up either by removing the diffo from the camera or by bringing all regional illuminations into the same timing (for example, that of Region 1).

Using a lens of 2-inch focal length operated at  $f:2$ , pictures were taken by standard photographic methods with four men between approximately 7 feet and 25 feet from the camera. The result is shown in Fig. 7. Only the foreground individual is in focus. The calendars in the middle ground should be noted, and are obviously badly out of focus. The poster behind the man in the background is indistinguishable.

Fig. 8 shows the corresponding result when IR System operation was utilized. The same lamps, lens, aperture, film, development, enlargement, and all other pertinent circumstances apply to both Figs. 7 and 8. The appearance of the calendars and poster should again be noted.

Using systems wherein relatively brief flashes of timed illumination are employed in each part of the set, it is possible to photograph the same subject matter "simultaneously" from different angles. It is true that different portions of each frame period of  $1/24$ th of a second are used for the photography of each angle shot but the final films give no indication of this slight time staggering between the various angle shots. The method can be illustrated by consideration of Figs. 9 and 10.

In the upper portion of Fig. 9 is shown one method of time division between two cameras. The periods during which the shutter of each camera is open, and the periods during which it is closed are indicated. Consider the period shown to the left during which the shutters are open. The length of this period may be taken as  $1/48$ th of a second on the arbitrary assumption that a 180-degree shutter is used. This period of  $1/48$ th of a second is equally divided by the vertical dot-dash line. The period of  $1/96$ th of a second to the left of the dividing line is assigned to Camera 1. Assuming 5-divisional operation, the flashes in the respective divisions occur as indicated by the vertical lines which are designated, respectively,  $F_{11}$ - $F_{15}$ . The period of  $1/96$ th of a second to the right of the dividing line is assigned to Camera 2. Assuming this also to be a 5-divisional take, the divisional light

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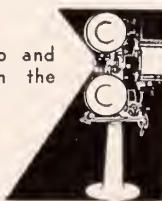
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flashes will occur as indicated by the vertical lines *F21-F25*. So far as photography is concerned the arrangement thus far described is adequate and enables the simultaneous photography by

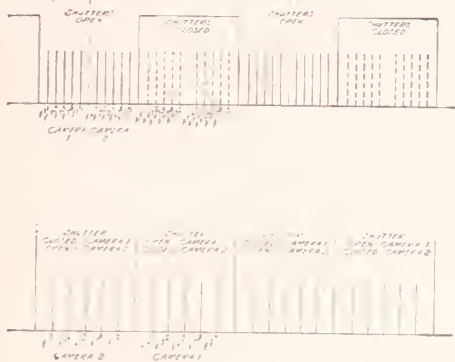


Fig. 9

the IR System of two different angle shots photographed, respectively, by Cameras 1 and 2. However, there would be only 24 flashes per second on each portion of the set using this arrangement, and this would give rise to noticeable flicker. To minimize or eliminate this flicker, additional flashes *AF11-AF15* and *AF21-AF25* are introduced as shown during the period when the shutters of the two cameras are closed. While these additional flashes do not produce any photographic effect they do minimize flicker since there are now 48 flashes per second illuminating each portion of the set.

An alternative arrangement of somewhat different type is shown in the lower portion of Fig. 9. In this case the two cameras are so operated that when the shutter of one is open and the set is illuminated, the shutter of the other is closed and the set is not illuminated by its associated lights. The divisional illuminations for Camera 2 are here indicated by *F11-F15*, while those for Camera 1 are shown as *F21-F25*. The avoidance of flicker in this arrangement requires some planning in the placement and use of light, and for this reason the arrangement shown in the upper portion of Fig. 9 will sometimes be preferred. Experiments showed the feasibility of operation according to the methods of Fig. 9 whereby several cameras are each associated with their timed illumination of the set, and with the divisional light distribution utilized in the IR System.

A schematic layout for the lights corresponding to the arrangements of Fig. 9 is shown in Fig. 10. The three-walled set is indicated. Camera 1 takes a comparatively wide-angle shot wherein the person *C*, who is the center of interest, is photographed in a semi-close-up. The illumination is produced by the divisional lamps *L11-L14*. Since this is to



Fig. 10

be a semi-close-up, the illumination may be kept comparatively soft. The lamps are coordinated with the camera and diffo as indicated by the dashed lines marked *Co-ordination 1*. Camera 2 takes a longer shot but with a narrower angle of a different section of the set as well as a partial side view of the individual *C*. Since this is a more distant view, the lighting may be made harder to emphasize detail and modelling. The corresponding lamps are *L21-L24*. In this case also, the lamps are timed in association with the camera and diffo as indicated by the dashed lines marked *Co-ordination 2*. It should be particularly noted that entirely different lighting effects can be produced in the pictures taken simultaneously by the two cameras—a markedly novel and obviously useful feature.

In essence, conventional studio lighting may be arbitrarily divided into key lighting and modelling lighting. The former is a more or less general illumination, intended to set a minimal lighting level through all or most of the set. The latter is lighting which is intended to produce shading, thus giving roundness, form, or solidity to persons or objects. It is generally carefully directed and of the spot variety.

In the IR System, modelling lighting requires relatively little change from the previously used conventional methods. Some care is taken to use a sufficient number of aimed spots to avoid undue space spillover while yet retaining the

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desired modelling for rather wide axial excursions of the actors. In the frontal regions this requires reasonable care. In the rear regions the latitude in light placement is so wide as to eliminate any necessity for special treatment.

Key lighting by the IR System requires suitable methods for duplicating the lighting vector in any important portion of the set. That is, the intensity and direction of the incident light must be duplicated in each region, and without undue space spillover of light from that region. It has been found in practice that any desired light vector normally encountered in motion picture photography can be duplicated by IR System lighting after a brief analysis of what is required. As experience in the use of the IR System is acquired, this duplication becomes increasingly simple. The details of light placement and the securing of specific effects using IR System lighting can not be here included. To some extent, as with all other lighting, it involves solving minor lighting problems as one goes along.

The following comments list certain minor limitations in the IR System which, in the main, are only apparent. Methods of overcoming these seeming restrictions are known, except where otherwise stated.

(a) *Need for Controllable Lighting.*—Since the regional or divisional control of lighting is an essential feature of the IR System it is obvious that the system can be best used under studio conditions. The evolution of modern light-sources makes their control practicable.

(b) *Registration Effects.*—The magnitude of the registration effects is controllable, and all indications are that such effects can be made pictorially imperceptible or negligible. A number of comparatively simple equipment designs

and operational methods have been devised for this purpose.

(c) *Lighting Efficiency.*—The lighting efficiency of the IR System depends upon the type of lamp which is used. Flashing lamps, wherein all radiated light is emitted during an extremely brief period, enable efficient operation. If arcs or incandescent lamps are used, with suitable shutter arrangements, the total amount of light produced by each lamp must be correspondingly greater than that which passes through the shutter opening to the related region or division of the set. The shutter naturally prevents the utilization of the light not passing through its opening. Thus, for shuttered lamps, while the amount of light on the actors does not exceed that used in ordinary photography, the total amount of light flux produced by the lamp (and consequently the power load and the studio air-conditioning load) must be increased. On the other hand, when flashing lamps (*e. g.*, gas lamps) are used, and provided these have the high efficiency of the better designs of this type of lamp, the light on the actors and also the total light flux produced by the lamps are each no greater than for usual photography. Thus the flashing lamp, although the more unusual, is in some respects more convenient and efficient.

(d) *Flicker.*—Inasmuch as the illumination is intermittent, precautions are taken to prevent visible or objectionable flicker. In Fig. 16, a 48-flash-per-second regime was illustrated. However, the lighting frequency on each portion of the set can be increased as desired. Experience has shown that 48-cycle illumination, while not absolutely smooth, does not seem to create sufficient flicker to be annoying to most people.

(e) *Acoustic Interference.*—Shutters, driving motors, or any other equipment for intermittent illumination timing must be silenced to an extent such that no sound from them is recorded. The expedients adopted for this purpose are in considerable measure conventional.

(f) *Inductive Interference.*—Flashing lamps, and their associated timing circuits, require suitable electrical design and shielding to avoid any undesired induction, for example, into the recording circuits.

(g) *Approach Shots.*—The maintenance of sharp focus in all parts of the set throughout approach shots is readily possible in the IR System. It requires the use of one of a number of expedients mainly based on a consideration of appropriate regional and divisional arrangement of the lighting. The detailed methods can not be included within the space of this paper.

(h) *Panoramic Shots.*—It is also possible readily to make panoramic shots using the IR System, the lighting arrangements suitable for the purpose being known and practicable. Experience and analysis have shown that the a wide variety of photographic procedure adaptation of regional illumination to dures is simpler than might be anticipated. END.



## Technical Progress

(Continued from Page 7)

field current of the generator powering them.

The first commercially-available tripod designed and built specifically for use with the various 35mm. hand-cameras and 16mm. professional-type cameras was introduced by the Camera Equipment Co., of New York, under the trade-name "Pro-Junior" tripod.

### Accessories—Amateur

One of the outstanding developments in this field was the Craig "Enlargo-Editor," a refinement of the familiar Craig 8mm. motion-viewer, incorporating a means of projecting an enlarged image of the frame being viewed onto a length of rollfilm in a camera-like housing, to permit the making of single-frame enlargements from 8mm. film.

Bell & Howell introduced a plunger-operated quick-action shift for their turret-equipped 8mm. camera, and a mechanically-operated fading and wipe device for both 16mm. and 8mm. cameras.

Harrison & Harrison introduced the "Rotofade," a compact, manually-operated fading device utilizing a disc-shaped graduated filter or fading-glass.

The American Bolex Company introduced an iris vignetter and a frame-counter for their cameras, and also the "Gearmaster" tripod-head, the first commercially available substandard tripod-head incorporating gear-actuated pan-and-tilt movements.

The introduction of a new line of 8mm. and 16mm. projection reels made of transparent plastic followed the curtailment of the steel and aluminum usually used for such reels.

### Meters

As already mentioned, there was an increased trend among professional cinematographers to the use of photo-electric meters.

Karl Freund, A.S.C., devised an interesting method of adapting a standard Weston meter for making incident-light readings. This was done by fitting an objective lens over the meter's cell, and a suitably-supported white target-card upon which the incident-light reading was made.

Capt. Donald Norwood, U.S.A.C. (Ret.) introduced a refinement of his "prevailing illumination" meter, marketed under the name Norwood "Director" meter by the Photo Research Corp., of Los Angeles. This meter utilizes Norwood's hemispherical incident-light collector and is individually calibrated to the laboratory handling the individual user's film. It is made solely for professional use, and has met with an unusually favorable reception; one studio, at least, having standardized on this meter to be supplied by the studio to all the staff cinematographers.

### Set Design

The release of "Citizen Kane" brought in its wake a marked trend toward the use of sets with practical ceilings. Properly used, such roofed-in sets can

add considerably to the atmospheric value of many types of scenes. It also compels the cinematographer to revise his system of lighting to a more realistic vein, lighting largely, if not exclusively, from the floor rather than from overhead.

The year brought several definite trends in the matter of designing for color-films into sharp focus. On the one hand is the use of dramatically-distorted color, as exemplified by "Blood and Sand," for dramatic effect; on the other is the opposite practice of underplaying color in settings, allowing actors and costumes to be the chief notes of color, as exemplified in "Blossoms in the Dust."

Art Director F. Paul Sylos did some unusually effective work in designing sets for the Pine-Thomas productions which permitted the Director of Photography to suggest expansive scenes with a minimum of actual set-construction. Art Director Vincent Korda also did considerable excellent work with set-miniatures in such films as "Lydia" and "Jungle Book."

The use of extremely large, stage-built exterior sets increased considerably in virtually all studios. The development of the "Ripple and Wave-machine" by Warner art-directors Anton Grot and Leo Kuter aided this. The machine, remarkably compact, permits projecting on a cyclorama-backing the images of suitable sets of transparencies in a manner which give a remarkable illusion of moving waves extending to a considerable distance.

### Laboratories

As already mentioned, several studios and laboratories changed over to the use of fine-grain positive emulsions for all daily and release-printing of both sound and picture, as well as for original recording and re-recording prints. In making this change, several methods were used to obtain the necessarily greater light output required by these emulsions. In some instances, mercury-arc lamps were used; in others, standard incandescent types, over-volted and air-cooled were found satisfactory. The results on the screen have revealed

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Several laboratories, under license from the Eastman Kodak Company, made commercially available a system of lacquering film as a means of protection from abrasions, oil-mottle, etc. The lacquer may be applied to one or both sides of the film, and when worn, removed and a new coat applied, giving what is in effect virtually a fresh print, since few abrasions penetrate beneath the tough lacquer coating. The treatment may be applied to both color and monochrome prints, and to negatives as well as positive film.

A new method of drying film was introduced during the year. Primarily for still photography, it should be adaptable to use in cine-film developing-machines as well, and should prove highly advantageous. This is the use of Infra-Red heat-lamps, which, it is stated by the makers, dries film with unusual rapidity despite climatic conditions, and has the further advantage of drying the film from the inside outward, rather than from the surface inward.

### 35mm. Sound

Chief development in the 35mm. sound field was the use, in key-city roadshow installations, of Disney's "Fantasound" system. This involves the use of separate films for picture and sound prints, the latter carrying four tracks, comprising three signal tracks and a control-track. The three signal tracks are reproduced through three separate amplification systems, and released by a multiplicity of loudspeakers distributed through the auditorium so that definite directional and third dimensional sound-effects are possible. Allied to this are several experimental processes, such as Warner-RCA "Vitasound," which make use of a control-track applied along the perforation-area of the film to switch on and off additional amplification and horns to give an increased volume-noise ratio from conventional recordings.

### 16mm. Sound

As already indicated, Hollywood's studios began to show increased interest in 16mm. sound-films for test and other purposes. The use of direct-16mm. sound-films for commercial purposes continued to increase, and the technique involved progressed notably. Today's better-grade 16mm. recording is very little, if any, behind average 35mm. recording as heard in the majority of the nation's theatres.

The commercial use of 16mm. synchronized sound-on-film recording was aided by the development of the Auricon Blimp and sound-drive for the Cine-Kodak Special, which is decidedly the most popular camera now available for 16mm. commercial filming.

A radically new 16mm. sound-on-film projector, the "Movie-Mite," was introduced for both commercial and home use. Suitable for individual showings of sales films, as well as home and small-group showings, this little projector is

simplified in the extreme, and reduced to unusual portability and low price.

Bell & Howell introduced for their Filmosound projectors an interesting oscillatory stabilizer, which greatly improves film-movement past the sound-scanning aperture and results in notable improvements in sound reproduction.

There seemed a considerable increase in the number of amateurs adding sound-recording to their picture-making hobby. The majority used sound-on-disc, frequently with the Synchro-Sound synchronizing system, and a few pioneered the use of sound-on-film with the Auricon recorder. In this connection, too, it is interesting to note that the curtailment of non-essential uses of aluminum, usually used as a base for acetate recording discs, brought forth the introduction of an improved type of cardboard-based acetate disc by RCA, and several types of glass-based discs by other manufacturers.

### Projection

Several new 16mm. sound-on-film projectors appeared. Victor introduced an arc model for use in extremely large auditoriums and theatres, while Eastman brought out 5 new Sound Kodascopes for home, school and business use. For display purposes, the same firm brought out the "Repeater Kodascope," a modification of a standard model, fitted with trips which, when actuated by the passage of adjustable rubber clips on the film, automatically stop, rewind, and then project a reel of film.

In the 8mm. field, Keystone brought out an 8mm. projector with the highest illuminating power thus far available—a 750-Watt globe. Bell & Howell also brought out an improved 8mm. model, designed to accept reels up to 400 feet in length. Eastman introduced an improved Kodascope known as the 8-33, in the moderate-price class. One firm in Hollywood also marketed an interesting continuous attachment for use with 8mm. projectors for display purposes.

### Still Photography

Most notable in the still field was

the introduction, by Eastman, of two new deLuxe miniatures. One, the Kodak Ektra, was a 35mm. minicam of the magazine type, making use of interchangeable backs much as the Cine-Kodak Special uses interchangeable film-magazines. It also employs the inside-coated Kodak Ektar lens. The Kodak "Medalist" is the first American high-grade miniature-camera built for film larger than 35mm. This camera, using standard 2¼x3¼ rollfilm, embodies all the familiar minicam features, including synchronized rangefinder focusing, interlocked shutter and film transport, paralax-correcting finder, etc.

Another interesting development was the use of Infra-Red sensitive materials for making photoflash pictures by "black light." Developed in England for use during blackouts, the technique originally involved the use of special filters over the flashbulb or its reflector, but in this country the Wabash organization developed a special "blackout" flashbulb with a permanently-applied filter coloring, in some instances a coating applied over the glass, in others, a dye in the glass of the flashbulb itself.

The U. S. Army Air Force made public some of the details of its "quick photo" system by which observers in a reconnaissance plane can take, develop and print a photograph within a matter of ten or fifteen minutes.

Bell & Howell introduced their "Slide-Master" miniature slide-projector. Designed especially for use in large auditoriums, this is one of the first, if not actually the first minislide projector to make use of high-powered projection globes up to 1,000-Watt size, and forced ventilation as in standard cine practice.

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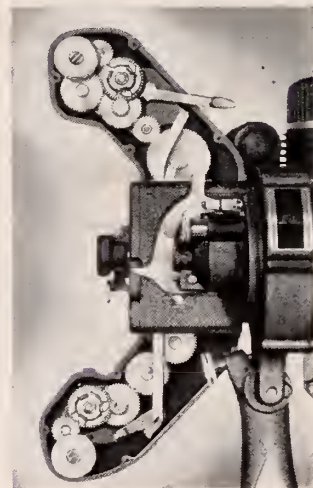
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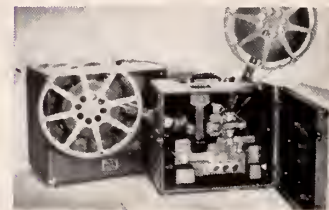


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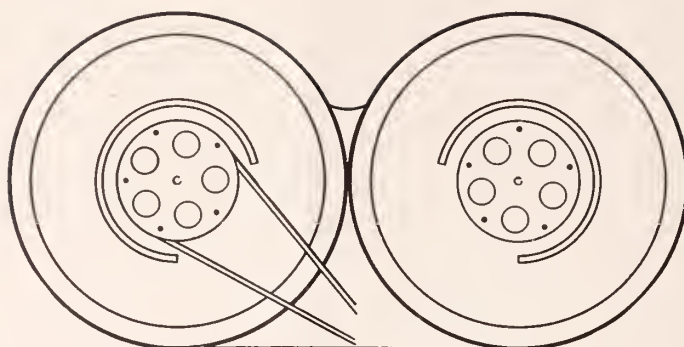
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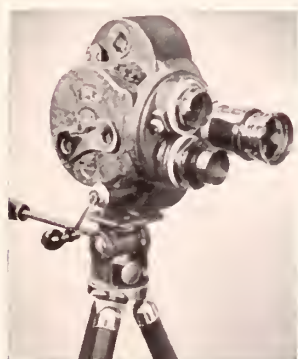
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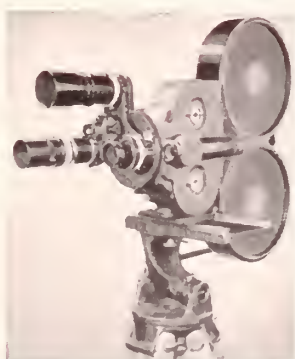


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THE MOTION PICTURE CAMERA MAGAZINE

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FEBRUARY, 1942

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## The Front Cover

This month's cover shows one of the U. S. Army's cinematographers filming a close-up of a tank in action. We regret the names of the cinematographer shown and the still photographer responsible for the picture aren't available so we could give more recognition than the simple line "Official Photo, U. S. Army Signal Corps."







## One hundred years ago

**I**N 1842, Edward Anthony founded the company that is now Agfa Ansco. We're proud of our hundred years as an American institution, but we're prouder of the letters that have been coming in to us from photographers, both professional and amateur, saying: "Congratulations! We wish you success in your next hundred years!"

\* \* \*

Even in the early 1840's, Edward Anthony was making daguerreotypes in Washington . . . using the rooms of

The Committee On Military Affairs for his sittings!

That early association with the U. S. Government has continued down our hundred years. Today, Agfa Ansco is working harder than ever to supply the U. S. Fighting Forces.

We are proud of our many contributions to photography during the past century and we are confident of our ability to create many more new advancements in the art during our next hundred years. We hope to stay—as we have always been—young in heart.

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Binghamton, New York

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**100 Years of American Photography**





Cadets of the Royal Canadian Air Force view a film on advanced air-fighting tactics. A fully-equipped theatre is a part of every R.C.A.F. Training Station.

# Movies Speed Training of R.C.A.F. Fighting Airmen

By WILLIAM STULL, A.S.C.

UP north of the border, Canada has taken sturdy hold of one of the most vital parts of the United Nations' world-girdling War Effort—the famous British Commonwealth Air Training Plan. To Canada come Royal Air Force fledgelings from every corner of the far-flung British Empire—not only from the broad Dominion of Canada, but from Australia, New Zealand, South Africa, India, and from England itself. And, but an incredibly few weeks later, from Canada they go forth to battle the Axis enemy wherever he may be found—highly trained airmen of Britain's Royal Air Force, Royal Canadian Air Force, and Royal Australian Air Force. Every year sees tens of thousands of them pass through the 91 schools to emerge as crack fighter pilots, bomber observers and radio-gunners who have already proven their ability to out-fly, out-shoot and out-fight the Hun and the Jap (to say nothing of the Italian) wherever they can meet him on anything like even terms.

Motion pictures play an important part in this vast Air Training Project. Speed is the keynote, and thoroughness: through the use of films, R.C.A.F. officials estimate close to 500,000 hours of instruction *per month* are saved, and

many subjects are imparted in a lasting way which could not be approached by any other method.

The R.C.A.F.'s movies are on a strictly 35mm. basis. One reason for this is the fact that all of the R.C.A.F. Training Stations are provided with 35mm. equipped theatres. And no wonder! The majority of these stations were created—almost overnight—from what was, two years ago, bare ground. Their sites were chosen more for suitable flying terrain than for nearness to cities; and while some of them are conveniently close to major Canadian cities, others may be fifty or sixty miles from the nearest village. Inevitably, provision of a post cinema was essential, so that the budding air crews might be provided with leisure-time entertainment. And it is only logical that these modernly-equipped theatres should "double in brass" as classrooms when training-films are used.

The majority of the training-films used are professionally produced. Under the energetic administration of John Grierson, the Canadian National Film Board has mobilized Canada's professional film industry for the making of both training and public informational films according to the highest professional standards. Production-routine is

very like that followed in Hollywood's cooperation with the U. S. Army. When the R.C.A.F. needs a film, its request is made known to the Film Board, which in turn assigns the actual production to a professional production unit—usually one of Canada's capable industrial film studios, though we understand some special films have been made in Hollywood, by Walt Disney and others. Script and production are supervised by R.C.A.F. specialists, and the completed production becomes part of the Air Force's growing film library.

The scope of the film subjects covers virtually the entire field of Air Force activity. As Squadron Leader Owen Cathcart-Jones, R.C.A.F. liaison officer in Hollywood, who has been serving as Technical Advisor on Warner Bros.' "Captains of the Clouds" explains it, "A modern airman has to know a good deal more than simply how to fly a plane or shoot a gun, and some of the subjects he must master don't lend themselves particularly to conventional methods of instruction—especially when you want to turn out airmen in mass production, and quickly. We've found, as many civilian educators these last few years have, that there's a deal of truth in the old Chinese saying that 'one seeing is worth a thousand tellings.' We're proving every day that what a chap sees on the screen in a well-made motion picture creates a more lasting impression than could be given by almost any other sort of instruction.

"Motion pictures make it possible to give a student a clear picture of many things an instructor can only talk about. For example, you can talk for hours about what happens in the cylinder of a modern airplane engine, or how a machine-gun uses exhaust-gases or recoil energy to reload itself: yet you can't get the facts across half so clearly that way as you will by showing your student a ten-minute movie. The motion picture can take him right inside the engine or gun and let him see for himself what happens. With a single showing, you can get the same idea over to a class of several hundred; with additional prints, you can show it simultaneously to a hundred classes in a hundred widely-separated schools. Every man in every auditorium will get the idea with equal clarity—and the knowledge will stay lastingly in his mind.

"We've found motion pictures invaluable for instructing ground crews and the personnel of aircraft factories in the proper methods of assembling and maintaining airframes and engines. It's no military secret that the various subassemblies of some types of aircraft we use in training may be manufactured in England or the United States and shipped to us for final assembly in Canadian plants. Modern airframes alone are rather complex, and then there are all the necessary auxiliaries, such as the maze of electrical and hydraulic systems



which operate the landing-gear, brakes, flaps, gun-turrets, and the rest, to make the whole thing a frightfully intricate assembly job unless your ground crew knows precisely what it's doing. We've found films invaluable in imparting this accurate information quickly. I rather fancy the United States' aircraft plants are finding the same thing as they expand production through the use of widely-scattered 'shadow factories' making units to be assembled finally in a centralized assembly plant.

"Some subjects can be visualized only by means of motion pictures. For example, there are certain features of our use of radio, such as radio navigation, the operation of the radiolocator, and so on. Practical experience with the instruments involved can show *how* these instruments should be operated—but only the motion picture will give a clear, visual impression of *why* they work as they do.

"Knowledge of the basic principles of aerodynamics is an important part of an airman's training. But here you are treating something ordinarily invisible—the flow of air across an airfoil. It can be visualized, however, in several ways. One is through the use of animation. Another is by photographing the flow of properly-colored streams of smoke past airfoil-sections or scale-model planes in a wind-tunnel. In one of our experimental stations we have a huge wind-tunnel, almost as large as the famous N.A.C.A. wind-tunnel in this country, in which we can use and photograph really large scale-models, and even some full-sized smaller types of aircraft. With these films we can bring our students an accurate, visual impression of such abstractions as why the flow of air across a wing creates lift, or what happens when a wing stalls, or when the controls are moved.

"Another important use we make of motion pictures is in training our budding air crews for flight at the extremely high altitudes at which modern planes fight. We've a huge decompression-chamber, not unlike that shown in one sequence of Warner's recent film, 'Dive Bomber.' In it, we can reproduce the conditions of greatly reduced air-pressure and temperature which exist six or seven miles above sea-level.

"Groups of students enter the tank, and make test 'flights' to various altitudes, both with and without oxygen equipment. At specified points, they go through various medical and psychological tests which show how their physical and mental coordination is affected by the changes in pressure, temperature, and so on. These tests are not only watched by Air Force instructors and doctors, but are photographed by a cine-camera. The films are then studied by both the officials and the students themselves.

"The motion picture is equally valuable in the more strictly military part of air crew training, too. Of course we make use of camera-guns similar to those used in the U. S. Army Air Force, and described in recent issues of THE

Training in bomb-aiming includes aiming, with a regular bomb-sight, at a moving, projected picture, which gives the illusion of actual flight. "Hits" and "misses" are indicated by a spot of light when bomb-release is pushed.



AMERICAN CINEMATOGRAPHER; ours, however, use 35mm. film.

"Motion pictures of scale-model planes train pilots, observers and gunners in recognition of our own and the enemy's various types of planes.

"In some of these miniature ships, we place small light-globes, located precisely in the positions where in a real aircraft fixed or movable guns are mounted. The lamps are carefully masked so that each shines only through the precise angle of fire that particular gun would have.

"Films are made of these models from every possible direction of attack. They virtually take the student pilot or gunner into the air to attack that particular type of enemy plane. If from any given camera-angle one of the little position lights is visible, the student knows that, in a real attack, he would probably find himself the target for an unhealthy stream of machine-gun bullets or cannon shell; only from angles where no light is visible could he be attacking the enemy's 'blind' angle. With these films, the students learn quickly and lastingly just how each type of German, Italian or Japanese plane should and should not be attacked.

"Supplementing these films are films taken from the 'combat cameras' installed in planes in actual operational service overseas. These cameras take 35mm. motion pictures every time a service plane's guns are fired, and bring back an incontrovertible record of the

airman's hits or misses in actual combat. Many of them show our chaps actually shooting down Nazi raiders, or strafing ground targets, and the like.

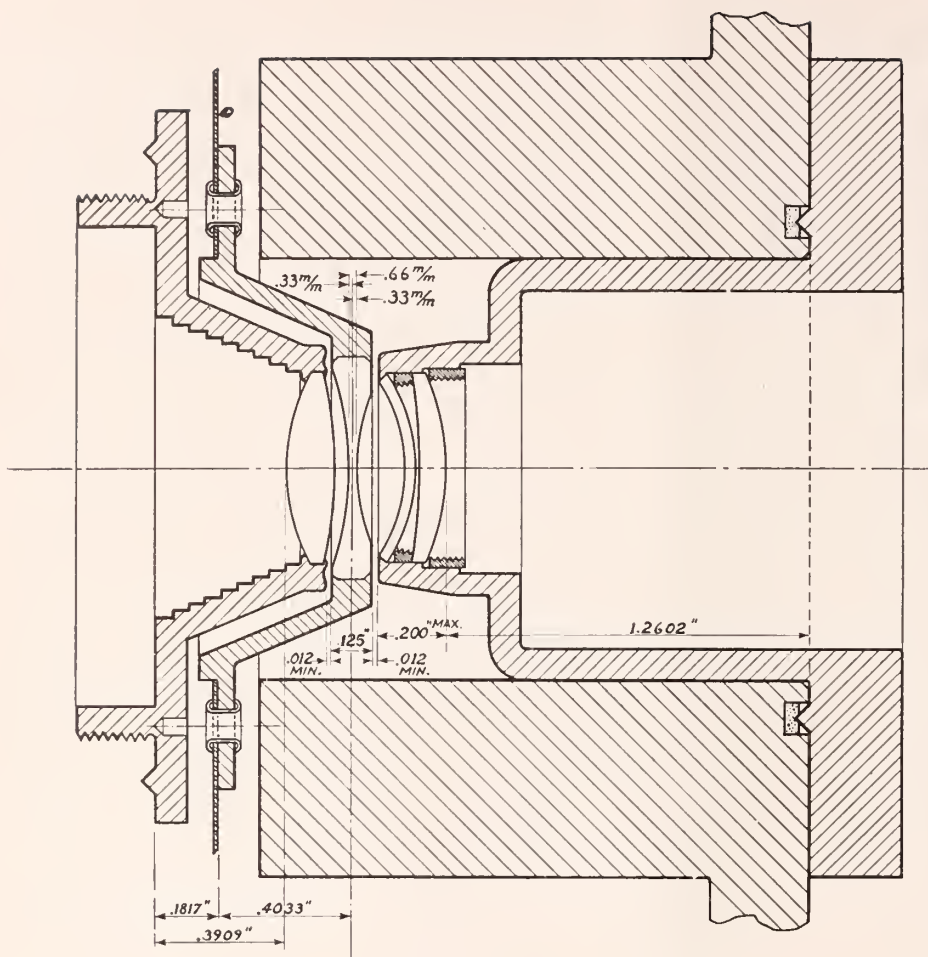
"These films eventually find their way to our R.C.A.F. training centers in Canada, where they are carefully analyzed by the instructors and their students who will soon be taking their own places in the operational squadrons in combat overseas.

"A very important branch of service flying is the Fleet Air Arm, whose squadrons operate from aircraft-carriers in the Royal Navy. Carrier operations can't, certainly, be overlooked in training. Nor is it. Again, motion pictures play an important part. Every operational landing and take-off aboard the Fleet Air Arm carriers is filmed by a 35mm. motion picture camera. These films not only form a record for the operational personnel and the Air Ministry technicians, but provide invaluable material for instruction. Films of carrier landings—good, bad and indifferent—by all types of carrier-based aircraft, are brought to the training schools, where they show the pilot-trainees just what to do and what not to do in the ticklish task of setting a fast fighting-plane down on the relatively small area of a carrier's deck.

"To what extent does our use of motion pictures speed up R.C.A.F. training? We estimate that it shortens the training-period of each student by more than

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Above: enlargement of 35mm. frame made with "Electroplane" camera. Left: diagram of "Electroplane" lens-system.

# THE ELECTROPLANE CAMERA

## A New System For Obtaining Natural Depth

By EDWARD P. HOLDEN, JR.,

Smith-Dieterich Corporation

FROM the first feeble and eye-wracking "flicker" of the primitive movie, to the present time, three cardinal improvements were always in the minds of the scientist and engineer,—Sound, Depth and Color.

The first of these—Sound—was finally introduced to motion picture audiences against practically universal opposition on the part of the producer. Even though far from perfect at its inception, once audience reaction became evident, all silent pictures were but remnants of an ancient era, gone forever.

Color, after vast expense in its development, and much complication even today in its production, coupled with more or less satisfactory results, has at length become a recognized feature of motion pictures.

But what of so-called Depth, which was said by no less an authority than the great Thomas A. Edison, to be the next important step forward in cinematography? Efforts without number have cluttered the files of the Patent

Office with vast reams of paper; monstrous cameras have been built on concrete bases; the shape and surface of the screen has been modified; the unfortunate audience has been saddled with spectacles and eye-glasses, all with what result? A bad imitation of the ancient stereoscope found on the sitting-room tables of our grandparents. No depth effect in its true sense, which is nothing more than clear, natural vision.

That was the condition prevailing up to some fifteen years ago. At that time, the late distinguished scientist and engineer, Dr. Ludwig M. Dieterich, A.S.C., attracted by this problem, gave up his entire time to research, study and practical experiment looking toward its solution. His efforts were directed not in the direction of stereoscopy, which he was well aware was not the true solution he sought, but even if mechanically and optically possible of accomplishment in motion picture practice, would cause such intense "eye-strains" that a stereoscopic picture or couple could not be

viewed for upward of three minutes continuously, without blurring of vision. The basis of Dr. Dieterich's theory was simple; its execution one of the most complex and important optical discoveries of all time.

The theory—can a lens be so designed and constructed as to automatically accommodate itself, as does the eye of man, to focus clearly at every perceptible distance and at the same time not change the size of the various images at different distances from the viewer? This theory and its solution, and the construction of such a lens, was pronounced optically impossible by most of the scientific brains of the time. The good doctor, in no way discouraged by such depressing commentary, persevered in study and experiment, using his own funds and those of some friends who believed in him; stopping from time to time as such funds were exhausted, until the coffers could be replenished.

At one period of this saga, the doctor, with such limited funds and still more limited scientific apparatus, took 3,300 photographic hand tests, of which three were successful, and thus demonstrated to himself the correctness of his theory, and that with the necessary refinement and development, his lens would indeed become a photographic eye.

At this time patents were applied for in most of the important countries of the world. So novel was his theory, and so revolutionary its accomplishment, that several of the patent offices refused to allow his claims, as impossible of performance, until furnished with the actual film showing the definite and unquestioned result to the doubting Thomases of the scientific and optical world.

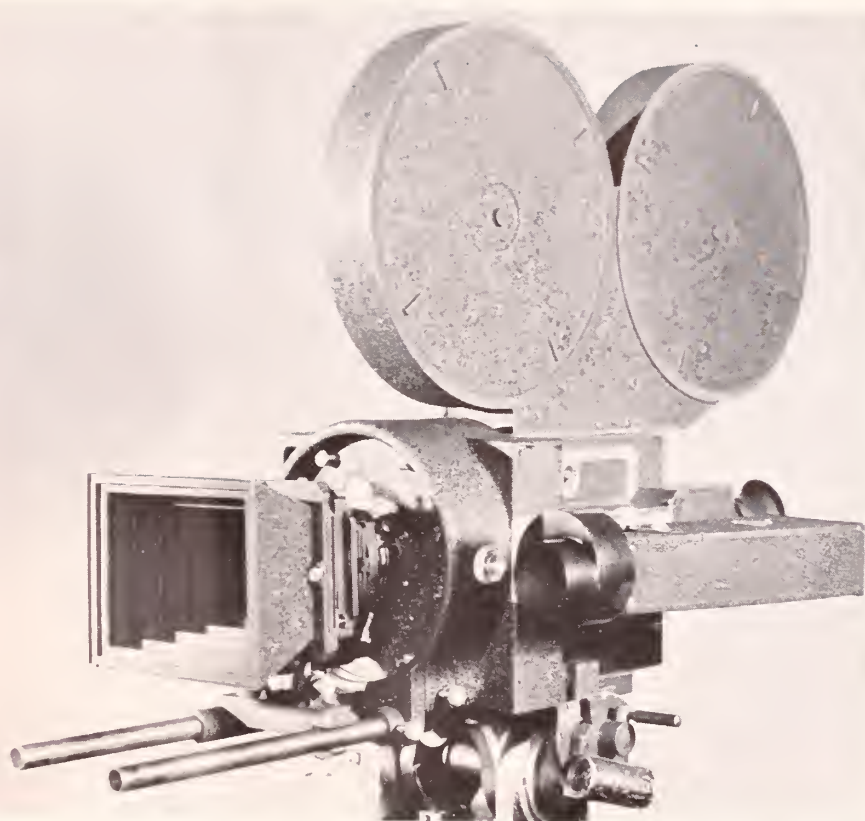
Thereafter, Dr. Dieterich equipped several Bell and Howell and Mitchell cameras with "Detrar" lenses, all of which performed satisfactorily, each model an improvement over its predecessor.

Shortly before Dr. Dieterich's death, a young sound engineer, P. Stanley Smith, who had been working on the same idea, knowing nothing of Dr. Dieterich or his patents, discovered the latter in the course of his research. He then realized that he was precluded by these patents from further progress. As sometimes, but rarely, happens in scientific research, these "twin" ideas did not





Above: enlargement from frame made with "Electroplane" camera. Right: the "electroplane" optical system applied to a standard Mitchell camera.



fight each other, but chose to collaborate. As a result, Mr. Smith applied for his patents on electrical operating mechanism applicable to the Dieterich "Detrar" lenses and a combination was made of all such patents, and the Smith-Dieterich Corporation of New York was formed. Further extensive studies and experimental tests were made over a period of years, which resulted in the birth of the present Smith-Dieterich Electroplane Camera.

What is it and what does it do?

The "Detrar" lens operates on the principle of the human eye, that is, automatically adjusts its focus without changing the size of the image, thus producing on the film the same illusion of depth as seen by the human eye.

The lens itself is composed of four cells, or elements, one cell of which oscillates along the axis of the system, without tilting or distortion of motion, for a maximum distance of  $3/10$  mm. The lens presently employed is a 50 mm. lens,  $f:3.75$ , coated, effectively  $f:3.2$  and so calibrated. Calculations covering the basic foci of a wide range of lenses of various focal lengths have been completed and checked by Smith-Dieterich engineers.

The present "Detrar" lens, like Dr. Dieterich's earlier objectives, is made by the Bausch & Lomb Optical Co., to the highest American standards.

The "Detrar" oscillating lens permits the moving of the plane of sharpness from an arbitrary point four feet from the camera, through the field to the infinity position, thus registering a sharp image of every object in that field in front of the camera, and resulting in uniform focus throughout.

In the Electroplane Camera, the oscillation occurs a multiplicity of times during the exposure of a single frame of film, thus eliminating the necessity of synchronizing the lens movement with the camera shutter and intermittent. This motion makes possible the change of equivalent focus of the system, without change of image size, so that, when operated in a motion picture camera a multiple of cycles, during the exposure of a single frame of film, registers an in-focus image of every object before the camera.

The lens in early Dieterich cameras was mechanically operated by a cam attached to the balance wheel of the film driving mechanism. This cam, in turn, transmitted motion through a series of levers and shafts to a sleeve in which the moving lens was mounted.

The current model of the Smith-Dieterich Electroplane Camera, the electrical operating control of which was designed and patented by P. Stanley Smith, is an adaptation of a standard Mitchell motion picture camera, fitted to a special base designed to receive the "Detrar" lens and its actuating motor. This lens-actuating "motor" is very much like that of the voice coil and exciter field of a dynamic loudspeaker. However, it is designed to meet precision of motion requirements. The development of this latter has required months of experimentation. It involves the use of a specially formed diaphragm on which the moving coil and the "B" lens (second from the left in the drawing) are mounted coaxially with respect to the other lens-elements of the system.

A very important feature in this respect is that the "B" lens and its driving and locating components have no frictional contact, and therefore can be described as a "floating" structure. Said structure is rubber and air damped. The lenses are in accordance with the Dieterich specification in U. S. Patent No. 1,927,925. The exciter field is operated by direct current. The moving coil is actuated by (1) alternating current, or (2) direct current, or (3) a combination of both in achieving (1) the maximum oscillation of the lens, which is .3mm; (2) the biasing action, or (3) a combination of oscillation and biasing.

Mr. Smith's first considerations in his

investigations concerned the possibility of moving a large mass or body at the rate of as high as 300 cycles per second, at the same time conforming to the limitations of designing a structure which would fit into but not interfere with standard accessories for both camera and sound-recording equipment.

The control instrument or console, which can be operated remote from the camera, supplies to the lens motor alternating and direct current, or both blended, which

- (a) Causes registry of all objects before the camera;
- (b) Operates the camera as a standard limited focus camera;
- (c) Causes an extension of the in-focus area, permitting, at the same time and if desired for artistic purposes, extreme background or extreme foreground out-of-focus with a selected range intermediate between the two extremes, in-focus.

Any one of these three conditions is producible by the simple throwing of a switch and without interruption or stoppage of the camera filming mechanism. All power for the lens unit is received from the control console, which in turn operates on 110 volt, 60 cycle alternating current.

In other words, automatically and exactly, any focus or depth of focus the cinematographer may wish to use is available instantly, with predetermined accuracy.

While the motion picture industry is a promising potential field for the Electroplane Camera, its principle readily lends itself to television, a field which is now definitely in its infancy, but which holds much promise. It is also adaptable to most forms of photography. END.





Television in pre-war England was similar to this scene in NBC's television studio.

# Color Television in England

By J. H. BAIRD

Baird Television, Ltd.

WHEN war broke out, television in England was firmly established and appeared to be entering upon a period of prosperity long delayed. Preparations were in hand to meet a large and rapidly growing demand for televisors both for the home and the cinema. With the outbreak of war the television transmission service was immediately stopped, and the results to the growing industry were catastrophic. With no transmissions available receiving sets were useless and commercial television came to an abrupt standstill.

The company of which I was President (Baird Television, Ltd.) one of the worst sufferers, was unable to continue. At that period I was engaged on research in Color Television, work which I have continued in private during the war.

The transmission of television in color is not new: it was shown for the first time in public as far back as 1928, when I gave a demonstration at the annual meeting of the British Association. The demonstration was entirely experimental

but the principle then shown is the same as that used in the latest apparatus.

It is in fact a process similar to color printing, three images corresponding to the three primary colors (red, green and blue) being superimposed. In the first color television apparatus, the three colored images were obtained from a disc perforated with three spirals of holes, one spiral being covered with a red filter, the other with a green, the third with a blue; and the three pictures so produced were superimposed to form an image in natural colors.

The picture then shown was very small, only a few inches square and of poor quality. Development since that date has been slow, since general attention has been largely centered on monochrome. At last in 1938 I was able to show a 12 ft. by 9 ft. Color Television picture transmitted by wireless from the Crystal Palace to an audience of 3,000 in the Dominion Theatre. The apparatus used, however, was costly and complex and not practicable for the home.

Immediately before the outbreak of war, in August, 1939, I was able to show Color Television for the home by using a rotating disc fitted with color filters in front of the ordinary Cathode-ray tube of the present-day home receiver. In our latest apparatus the number of lines has been increased to 600, giving nearly twice the amount of detail available on the British Broadcasting Company's black-and-white pictures.

Both three-color and two-color processes have been experimented with. For practical purposes the two-color has much to recommend it at present and in our latest apparatus a two-color process is used in conjunction with a special form of scanning, a triple-interlaced 200-line primary field being employed, alternate fields passing through red and blue filters giving a final 600 line picture in color.

The complete field is scanned  $16\frac{2}{3}$  times per second and complete colored pictures are transmitted at the rate of eight and one-third per second. With triple interlacing and alternate primary scans colored, this very low picture frequency can be used without undue flicker and with the very great advantage that the 600-line color picture can be transmitted on the same wave-band as that used by the B.B.C. for their 405-line black-and-white transmission.

The use of two colors in place of three simply means substituting a two-color disc for a three-color. It entails a loss in color rendering, but if three colors are used a much wider channel is necessary for transmission, and considerable alterations in existing apparatus are required.

We are experimenting with both three and two-color, but for practical working the use of two colors has many advantages and commercial color television will probably commence with a two-color system which is immediately adaptable to existing apparatus and available channels.

After the war the broadcasting of color television will, I feel sure, be one of the major television developments. The colored television picture is far superior to the monochrome, and sooner or later must supersede it. As far as Britain is concerned, the television service will be extended to cover the whole country instead of being confined to the London area. Cinemas will be equipped with television screens and television will become a regular feature of their programmes.

The importance of the television service is well recognized to-day and we may look forward to its early resumption as one of the first post-war developments. END.





# Motion Pictures in the Army

By ROBERT B. KONIKOW

**T**HERE is nothing amateurish about the Army way of making motion pictures. At Fort Monmouth, on the New Jersey coast, there has been set up a complete organization for making films for the visual instruction of our rapidly growing Army. Called the Training Film Production Laboratory, this Signal Corps unit does everything on a film except the actual processing.

Under the direction of Lt.-Col. M. E. Gillette, its Commanding Officer, who received his practical training in film-production in Hollywood's studios under the Academy Research Council's Army officers training plan, TFPL has forged rapidly ahead both in technique and in facilities and equipment. On August 1, 1940, the unit consisted of just one officer, three enlisted men and one civilian employee. Now, within two weeks of our entrance into the war, there are more than 250 people working under Col. Gillette. The hastily-erected wooden building, now taxed to capacity, is soon to be supplemented by a fireproof brick building to house the branches of the unit that edit, record sound, photograph animated sequences, and other sections that work directly on the film itself. In addition, a small sound-stage for shooting what interiors are necessary is under construction.

This rapid growth reflects a basic change in Army training policy. No longer is instruction left completely in the hands of the traditional hard-boiled sergeant. He was a master of his craft. He could take a squad of raw recruits

and turn them into first-class fighting men, but his method was that of the individual. Today time is too short and equipment is too complicated for mass training to take place in this comparatively inefficient manner. We need an assembly line to make today's soldiers, and motion pictures are the answer.

A properly made film can teach more quickly and more completely than anything but personal, man-to-man instruction, obviously not a practical method to answer today's needs. The motion picture can be repeated as often as necessary. Through close-ups, the class can be brought as near to the vital points of the lecture as is desired—much nearer than at an actual demonstration. Animation can bring the men right into the interior of the machine itself, in a manner that no other method of teaching can approximate.

The unit handles a film very much as a Hollywood studio does. Each production has its complete crew: producer, director, cameramen, editors, sound men and so on right down the line. If location shots are needed, the unit is equipped to go anywhere to get them.

The first step is taken when the subject-matter of a film is approved by the War Department. Subjects that are of interest to the entire Army get priority in filming. The order of making films designed for one Arm or Service of the Army come next, in order of their necessity and importance. The Air Corps is the only branch of the Army that makes its own films, all others being done at Fort Monmouth by TFPL.



Top, left: one of the Army's "location trucks"; right, an Army film unit makes a dolly-shot on location, with improvised dolly and track. Below: Army film units "on location" producing training films; bottom, part of the animation section at Ft. Monmouth.

Suppose that the Engineering Corps wants a film on the erection of pontoon bridges. When TFPL has been given the "go ahead" signal, the Engineering Corps sends one of its officers, expert in pontoon bridges, to Monmouth to act as technical adviser. The subject is assigned to one of the Unit's senior officers, who acts as producer on all Engineering Corps films. Other officers are assigned to different branches of the Army in a similar fashion.

Writers are assigned, and with the

(Continued on Page 84)





## Shooting Technicolor in the Air

By *ELMER G. DYER, A.S.C.*

**P**ROPERLY speaking, this article should be credited jointly to Charles A. Marshall, A.S.C., Winton Hoch, A.S.C., and Elmer Dyer, for we have just completed two Technicolor aerial films in succession—Warner Bros' "Dive Bomber" and "Captains of the Clouds"—upon which we worked as a team, rather than as individuals. No one of us deserves sole credit for what we were able to put on the screen, and anything written about what we learned and what we did while photographing Technicolor in the air is necessarily based on our joint experiences.

As far as aerial cinematography goes, the fact of color is about the biggest asset a cinematographer can have. It simplifies his work enormously, and makes even routine scenes appear much more spectacular on the screen. This statement, by the way, applies to *any* color process, though naturally most forcefully to perfected three-color systems such as Technicolor in 35mm., and Kodachrome in substandard cinematography. A great deal of the technique we used in Technicolor is also excellently adaptable to 16mm. Kodachrome, too.

In black-and-white aerial camerawork, one of your biggest problems is that of securing satisfactory tonal separation between the planes you are photographing and the sky or ground which

forms the background. To this end, the aerial cinematographer has to have and use an assortment of filters which is often more extensive than anything normally required for non-flying camerawork.

In color, this problem does not exist. Granting that the planes themselves are painted in properly contrasting colors, the fact of color provides the separation automatically. With the exception of the blue filters used for Technicolor night-effects, no filtering is either necessary or possible in Technicolor camerawork. The same applies in Kodachrome, incidentally; the so-called "haze filter," which cuts out ultra-violet in extreme long-shots, does not seem to be of any benefit in making aerial scenes.

It is vitally important, however, to make sure that the ships you are going to photograph are painted in colors which will provide a definite visual contrast with the backgrounds against which they will fly for your camera. For example, photographed against the sky or flying over a lake or ocean, or over the grayish tan of a California desert, a plane painted in the olive green of the United States Forest Service ships would stand out excellently. But photograph that same dull-green plane flying over forests like those in Northern Canada, and it will be virtually invisible.

The most satisfactory colors, we've found, are the warmer ones—reds, oranges and bright yellows. These make a vivid contrast against almost any background, whether it's the green of forests and fields, the blue of sky and ocean, or the pastel shades of our western deserts. Both our own air services and the R.C.A.F., you will notice, paint their primary training ships a brilliant yellow or yellow-orange for this same reason. Other students can see them quicker and farther off than if they were painted any other color.

For preference, the planes photographed in color should be painted chiefly in these bright, warm colors. If the art-director wants to employ any other colors, for the closer, ground shots, they should be used as trimming or striping, rather than the basic, overall coloring.

We learned this the hard way in making the "bush flying" sequences for "Captains of the Clouds." Some of the color-design specialists had preceded us to the location, and had had the planes we were to use painted in what were no doubt very artistic color-schemes. One ship was a dull cream-color; another very dark red; another jet-black with orange trimmings, and so on. They were really very pretty—only they were not at all photogenic. The script called for a lot of spectacular action in long-shots, with the planes hedge-hopping low over the dark-green forest floor. And all too often, in those long-shots, the dull colorings of those planes made them all but indistinguishable against their background. The one lighter-colored plane stood out better against the dark background—but when we shot it over a light-toned, brightly-reflective lake, or against a bright sky, we found it, too, was very effectively camouflaged!

Unfortunately, we could not have those planes repainted, nor could we replace them with others more suitably colored. Canada was at war, and civil planes were distinctly at a premium. The studio's advance-agents had done a really heroic job in rounding up the five seaplanes we used, and five identical land-planes to use for later sequences, doubling for the others with their floats changed for wheels. Our time was short, and we had a lot of difficult action to film, so we worked with what we had, and liked it. Had the planes been painted more suitably, as the studio's own art department and all the flying specialists recommended, I am sure the scenes we got would have been considerably more effective on the screen. We proved it later, I think, when we reached the sequences devoted to R.C.A.F. training, and were able to work with the bright-yellow "Fleets," North American "Harvards," and Fairey "Battles" the Royal Canadian Air Force uses for training.

Lighting and exposure are of course important. To bring out the best color-contrasts in aerial color-scenes, a fairly flat front-lighting is preferable, unless one is flying over hilly or mountainous





country, where of course more of a cross-lighting is useful to accentuate the contours of the hills. Back-lighted effects over water or clouds, and in sunsets, are effective; but they should be avoided in photographing thrill action and the like, for the back-lighting often glitters off the polished surfaces of a plane's wings and washes out the color. Then, especially if the plane is headed toward or directly away from the camera, it becomes almost invisible until it approaches closer, or a chance glint of highlight reveals it to you.

In determining exposure, the best practice is to follow religiously the dictates of a dependable reflected-light meter. For Technicolor, the regular Technicolor meters are excellent; however, I had a meter of my own—a battered old amateur meter (a "Tempi-phot," I think it is called) that I picked up in Germany a number of years ago. I had it recalibrated for Technicolor, and found, to the great surprise of the Technicolor engineers, that it was quite as accurate as their own special meter, and considerably quicker to use. Speaking generally, I'd say any photoelectric, reflected-light meter you'd been using successfully for black-and-white can serve excellently as a guide to exposure in making aerial color scenes.

Weather-conditions are important, as always, but with a difference: in black-and-white you can, by means of filters, infra-red film, and the like, often penetrate visual haze to a surprising degree, and get a good deal more on your negative than you can see with your eye. In photographing color in the air, your eye is a very accurate guide to weather conditions: as Bell & Howell used to say in their 16mm. advertising, "What you see, you get."

One of the biggest problems in aerial Technicolor cinematography at present is the unwieldy bulk of the three-film Technicolor camera. I have noticed that from time to time production cinematographers have commented on the way

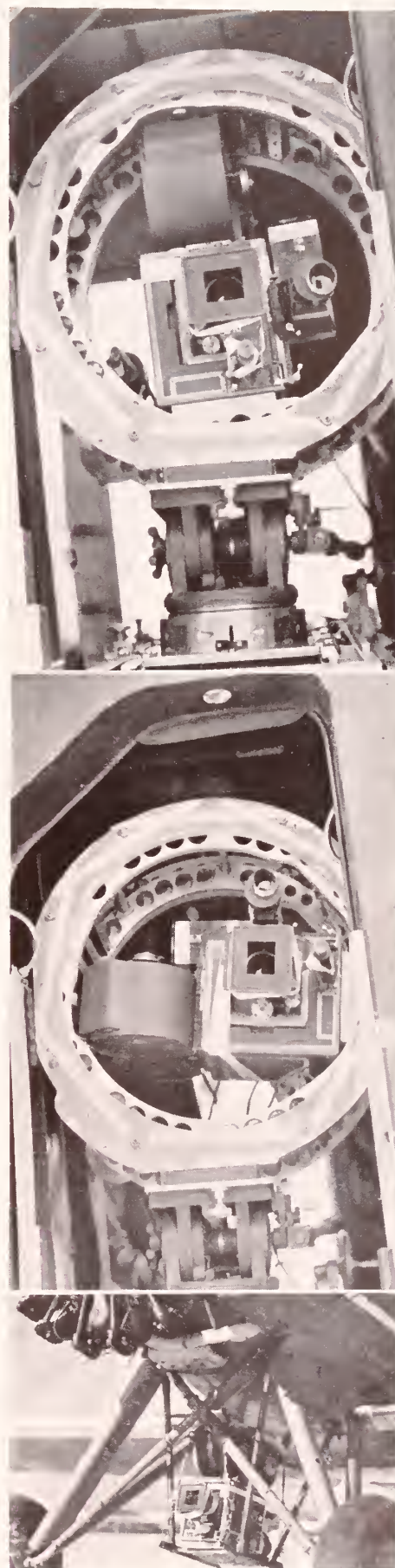
this factor sometimes makes things a bit unhandy on the ground in studio or location. In the air, it is very much more of a handicap. There is never any too much room for camera-manipulation in any plane. In addition, the slip-stream is rushing by you at several hundred miles per hour, and if your camera is—as it sometimes must be—out in the open, the wind fights like a giant to keep you from getting the shot you want.

This can, to a certain extent, be simplified by mounting your camera as we did, inside a cabin plane, and shooting through an open door. On both of these pictures, we used the same camera-ship—a big trimotored Stinson monoplane, originally built for airline service. There were two doors provided, fortunately in line with each other on opposite sides of the fuselage, so that we were not too badly restricted. A special camera-mount was developed for the job. It consisted of an extensible track on which, by means of a rack-and-pinion movement, the camera could be moved from one side of the ship to the other, and if necessary even extended several feet outside the door. We kept the camera inside the ship as much as possible, however, for with it extended out into the 200-mile-an-hour slipstream broadside on, the bulk of the big three-film camera made it extremely difficult to manipulate.

Where a free mount of this nature is necessary, by the way, we learned that it is by far the best to use one of the big Mole-Richardson geared pan-heads. Our outfit was equipped with a friction-type freehead, and when the weight and unbalance of the camera were combined with wind-resistance in the slipstream, it became almost impossible to manipulate the camera with any accuracy. It was certainly a strenuous job!

In making scenes in which dive-bombers or pursuit planes make almost ver-

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Top, left: Elmer Dyer, A.S.C., with the rotating camera-mount; below, two closer views of this mount; note extensible track. Bottom: Technicolor camera in fixed mount.





Kellino and his camera were catapulted much as this U. S. Naval scouting plane is being "fired" from a battleship. Plane accelerates to over 60 miles per hour in about 60 feet.

## ROY KELLINO FILMS BRITAIN'S WAR EFFORT

By W. G. CAMPBELL BOSCO

**D**URING the last year or so many of the industry's ace cinematographers have disappeared from the Hollywood scene to enlist in the service of Uncle Sam. Since December 7th, even more of the most distinguished names in the A.S.C. roster have shown up in the rolls of the U. S. Army, Navy and Air Force photo sections.

In the all-out effort necessary for the successful prosecution of modern, "total war," the mobilization of every peacetime skill or profession that can be coupled with the War Effort is required; and the skill of filmdom's camera aces serving with Uncle Sam will prove a valuable contribution in that effort.

How much, and in how many ways, the motion picture is being used by the armed services cannot be fully told yet. But it is no secret that among the duties of these military cameramen will be not only to turn out training films, but to record actual action, both behind the scenes and in the front line, of the epic drama in which we are now engaged; a drama of such stupendous proportions that it dwarfs into insignificance even the most super-colossal production these

lensers had previously recorded for the amazement and amusement of the cinema-going world. Much of the footage acquired at the scenes of action will be used to satisfy the public interest in "what's going on." We're all in this, in one way or another, and it is considered essential to civilian morale and a continuing high spirit that we be shown "what's going on" through the realistic medium of the motion picture.

Some idea of what our Hollywood cameramen will be doing in the services "for duration" can be gleaned by recounting some of the experiences of one of England's most successful young directors of photography, a friend and schoolmate of the writer, Roy Kellino.

In England, the valuable work of the cameraman in wartime has been clearly recognized. They are known as the "front-line propagandists." And the use of the term "front-line" is no misnomer. Up to the last information received, Roy Kellino had seen action at Narvik, Dakar, Freetown and the Italian naval bases . . . traveled 40,000 miles at sea within three months . . . photographed dog-fights, "sweeps," parachute jumps

and aerial torpedo attacks carried out by the Fleet Air Arm.

Once, while under submarine attack, he ground out a photographic record of the action which included scenes of a torpedo churning relentlessly towards the boat upon which he stood, and missing by scant yards.

Roy is also credited as one of the very few cameramen to have ever been catapulted, complete with camera, in a plane from the deck of a warship.

"It was no tea-party!" he said. "It was like being hit in the back with a sledge-hammer." He goes on to say, "I took with me an ordinary Mitchell camera, electrically-driven, such as we use in the studio. I switched on just before the bump came, and the camera fell in my face. But it didn't stop turning. It did its stuff beautifully and the results, photographically, are terrific."

The catapult experience was one of many Kellino had in getting scenes for "Ships With Wings." Made with the fullest cooperation of the Admiralty, "Ships With Wings" might give us a hint as to what use the efforts of our absent Hollywood cinematographers will be put. It is an actual record of contemporary warfare, containing an infinity of authentic facts and meticulous in detail, into which a story has been woven to give shape, clarity and continuity to the issue.

"Convoy" was similar. In making "Convoy," Kellino ran the gamut in oceanic transportation; from the sleek decks of a modern cruiser to the rolling, pitching decks of a destroyer on duty and then to a soiled, toiling collier—one of those brave little ships who contribute so gallantly to maintaining the lanes of Empire.

Kellino saw action, too, from the decks of the famous aircraft carrier "Ark Royal." And he found out that he had to lash his tripod to the deck loosely, in a special manner, so that the shock of firing the great guns would not splinter the legs of his tripod. He also found a substitute for the indispensable studio "dolly" in a torpedo cradle—one of those wheeled carriages used to bring the 18-foot projectile to the firing tube. He reports they make an excellent substitute for a camera dolly and are much better adapted to the confined space on a man-o'-war!

While waiting to hear about the new assignments our English friends have been sent on we should be getting word from our own Hollywood contingent. They have a great job to do and we know they will do it nobly. The entire world and its posterity will owe a debt of gratitude to those "recording angels" who make the photographic record of Uncle Sam's righteous wrath in all its might, and film the eventual victory. **END.**



**T**WENTY years ago a virtually unknown young cameraman approached Fred Niblo, who was then one of the industry's greatest producer-directors, and asked for the chance of photographing Niblo's next production. "You don't know me, Mr. Niblo," he said, "but I know I've got the ability to give you the best photography you ever had. Just to prove it, I'll make you this proposition: let me work on your picture just one day. If when you see the rushes you aren't satisfied with my work, you can not only fire me—I'll pay whatever it costs to retake that day's work!"

History doesn't record what Niblo thought, but he probably reasoned that there might be something behind such enthusiastic confidence, and he could hardly lose, anyway (he didn't realize that the earnest young man before him hadn't enough in the bank to pay for even a single scene's retakes!). At any rate, he agreed to the tryout. And for once, the Horatio Alger formula worked as successfully in life as in fiction: the first day's takes proved conclusively that the young man knew his camera. So did the next day's, and all those that followed. "Thy Name Is Woman" became the first of many notable Fred Niblo productions which bore the credit "Photographed by Victor Milner, A.S.C."

That incident was probably the start of Vic Milner's career as an ace cinematographer—a career that has since led to a well-earned Academy Award and universal recognition as "the old maestro of lighting." But it wasn't his real start in cinematography by a long shot. You can talk all you want to about the "instinct for photography;" Milner unquestionably had it: but before he could capitalize on it by meteorically gambling—and making good—on his ability to photograph a major superproduction, he had to spend many long years learning and mastering the technique of the camera. He learned the hard way, too.

Rather more than thirty years ago Vic Milner was a gangly, red-headed operator in a New York "nickelodeon." And as he cranked the show's five flickery reels through the projector by hand, he fell in love with a picture. It wasn't the shadowy image of any 1910 glamor-girl, nor the powder-punctuated heroics of a cowboy hero. It was an inconspicuous little "filler"—a Pathé travelogue.

This particular picture was a travelogue of the ice-packs of Spitzbergen. Whoever photographed it had done so exquisitely, capturing the fascinating interplay of dazzling highlight and almost opalescent half-shadows which heighten the other-worldly beauty of a sunlit iceberg.

Again and again young Milner ran it through his projector, feasting his eyes on the strange beauty the camera had captured. Later, on another job, he ran it again. It crystallized his ambition to become a cameraman, and create more of such enthralling beauty with lens and light and shade.



## Aces of the Camera XIV: VICTOR MILNER, A.S.C.

By WALTER BLANCHARD

The chance came when he got himself a job as an apprentice in the combined camera factory, laboratory and studio of the pioneer cine-engineer, Eberhard Schneider. Under Schneider's tutelage, and that of his daughter, who ultimately became Mrs. Milner, the boy learned the cinema craft the hard way. He developed film, printed it, toned, tinted, spliced and edited it. Finally, he mastered the craft of operating a camera so thoroughly that his employer sent him out with a customer to photograph what was one of the first feature-length productions made in America—an independently-produced version of "Hiawatha."

It was a success, and Cameraman Milner, now launched on a photographic career, next spent several years with

another customer, encircling the globe making a series of travel-films. Then followed a long and exciting engagement with Pathé News, as one of America's pioneer newsreel men. How he "covered" our brief war with Mexico in 1914, "staging" the battle of Vera Cruz when he arrived too late to film the actual fight, is an epic in itself, and one which he told most entertainingly in *THE AMERICAN CINEMATOPHIL* some fifteen years ago.

Switching to theatrical camerawork when his honeymoon brought him to California's budding studios in 1918, he began the hard climb from an assistantship to the post of First Cinematographer. He made it so successfully that when the American Society of Cine-

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# A.S.C. on Parade

## Oscar

Arthur Edeson, A.S.C., Chairman of the Academy Cinematographic Award Tellers Committee, announces the following productions as nominees for the annual Academy Award for the year's best achievement in black-and-white cinematography: "The Chocolate Soldier," (MGM) photographed by Karl Freund, A.S.C.; "Citizen Kane," (RKO) photographed by Gregg Toland, A.S.C.; "Dr. Jekyll and Mr. Hyde," (MGM) photographed by Joseph Ruttenberg, A.S.C.; "Here Comes Mr. Jordan," (Columbia) photographed by Joseph Walker, A.S.C.; "Hold Back the Dawn," (Paramount) photographed by Leo Tover, A.S.C.; "How Green Was My Valley," (20th Century-Fox) photographed by Arthur Miller, A.S.C.; "Sergeant York," (Warner Bros.) photographed by Sol Polito, A.S.C., with battle sequences by Arthur Edeson, A.S.C.; "Sundown," (Walter Wanger-United Artists) photographed by Charles Lang, A.S.C.; "Sun Valley Serenade," (20th Century-Fox) photographed by Edward Cronjager, A.S.C.; and "That Hamilton Woman," (Alexander Korda-United Artists) photographed by Rudy Maté, A.S.C.

Nominations for the Academy Award for color cinematography are: "Aloma of the South Seas," (Paramount) photographed by Karl Struss, A.S.C., Wilfred Cline, A.S.C., and William Snyder, A.S.C.; "Billy the Kid," (MGM) photographed by Leonard Smith, A.S.C., and William Skall, A.S.C.; "Blood and Sand," (20th Century-Fox) photographed by Ernest Palmer, A.S.C., and Ray Rennahan, A.S.C.; "Blossoms In The Dust," (MGM) photographed by Karl Freund, A.S.C., and W. Howard Green, A.S.C.; "Dive Bomber," (Warner Bros.) photographed by Bert Glennon, A.S.C., and Winton Hoch, A.S.C., with aerial photography by Elmer G. Dyer, A.S.C., and Charles A. Marshall, A.S.C.; and "Louisiana Purchase," (Paramount) photographed by Ray Rennahan, A.S.C., and Harry Hallenberger, A.S.C.

The ultimate winners of these two Awards will be chosen by vote of the industry's Directors of Photography. Before the final ballots are cast, the films nominated will be shown to the Directors of Photography at a series of special showings every Wednesday and Friday evening at Warner Brothers laboratory projection-room.

Harry Jackson, A.S.C., Wilfred Cline, A. S. C., and the others of the Twentieth Century-Fox location unit which was Technicoloring scenes for "Shores of

Tripoli" at Pearl Harbor on the day are safely back in Hollywood. But—don't ask them about it. They were so completely in the thick of things that they've pledged wartime secrecy "for duration" along with the regular Navy men.

Add A.S.C. in uniform—Bert Glennon, A.S.C., standing by for War Department orders.

Phil Chancellor, A.S.C., probably takes rank as the A.S.C. member longest in uniform. He's in his third or fourth year of active service with the Navy.

Ray Fernstrom, A.S.C., munching vitamin tablets after contributing a pint of blood to the Red Cross "blood bank."

Karl Struss, A.S.C., draws one of the top assignments of the year—Director of Photography on Orson Welles' Dolores Del Rio starrer "Journey Into Fear."

George Folsey, A.S.C., sporting a new Norwood "Director" exposure-meter.



Byron Haskin, A.S.C., decorates Elmer Dyer, A.S.C., with the "Order of the Flying Work-horse" for his labors in "Dive Bomber" and "Captains of the Clouds," while Winton Hoch, A.S.C., looks on approvingly. We suspect the pic was snapped by the third "Flying Work-horse," Charles A. Marshall, A.S.C., who teamed up with Elmer and Winnie pay-hopping for the two air-opses.

Ted Tetzlaff, A.S.C., seems to be popular with the ladies and gentlemen at Columbia. Just through with a bang-up job of lensing "The Lady Is Willing," he hurries back to film "The Gentlemen Misbehave." Both assignments were loan-outs from his home studio, Paramount, where he's waiting a decent script to direct.

Henry Sharp, A.S.C., dropping in to help us review a couple of stand-out 16mm. commercial films. Thanks, Henry.

Milton Krasner, A.S.C., draws the Di-

## Barney ("Chick") McGill, A.S.C.

It is with sincere regret that we chronicle the death, on January 12th, 1942, of Barney ("Chick") McGill, A.S.C. Although he had been suffering for many months from a severe heart ailment, his passing nevertheless came as a distinct shock to his wide circle of friends in and out of the industry. Quiet and unassuming, he had, during a photographic career extending over nearly thirty years, carved an enduring place for himself as one of the foremost masters of the camera. To his photographic skill have been entrusted many of the most important productions the industry has made during the last twenty years or more, and many are the stars who owed much of their initial success to his knowledge of lens and lighting.

But it is not for these achievements that Barney McGill will be remembered, but for the rich quality of friendliness with which he was endowed. Never demonstrative in manner or speech, he nevertheless had that indefinable quality which made close friends and casual acquaintances alike feel he liked them personally, and that the world was somehow a bit better for having a man like "Chick" McGill in it. The A.S.C. and its members will miss him as a loyal friend and fellow-worker, and join in extending sincerest sympathy to his wife.

## Stacy Woodard

We regret to chronicle also the passing of Stacy Woodard, one of America's foremost makers of documentary films, who died unexpectedly January 29th. Although his work as a photographer and producer of documentary films kept him so constantly roving that he was not a member of the A.S.C., his face was familiar at the Society's technical gatherings, and his passing will be mourned by the members of the A.S.C. as the loss of a valued friend and fellow-craftsman.

rector of Photography assignment on Frank Lloyd's 1942 Edition of "The Spoilers."

Thanks to Ray Foster, A.S.C., for a nice note telling what he's doing in New York now that Warners (with whom he was for eleven years) have closed their East Coast studios. He's just finished the first U. S. Government Propaganda Film, produced for the Office of Emergency Management in Washington by Phil Martin, Jr., with Garson Kanin directing. Titled "The Shield," it's slated to come out with offstage narration by Spencer Tracy.



# THROUGH the EDITOR'S FINDER

FOR more than thirty years, the industry has been wont to say "Film is the cheapest thing on the lot." The only thing cheaper was—the tin can the film came in! Successive generations of us have seen them kicked around every studio as valueless, waste material. They've been used as ash-trays and spittoons in projection-rooms and shops—as handy pans to catch the drip of overflow oil from machines and in garages—even as dishes to hold milk for the studio cat. Once they'd protected a roll of raw negative or positive film on its journey to us from Rochester or Parlin, they'd served their purpose. Who cared what became of second-hand film cans?

Today, we've got to revise our thinking on the subject. Today, those despised film-cans are valuable—worth, perhaps, more than the film they originally contained.

Why? Because they're made, not of tin, but of steel. Steel which is on Priority—steel which is an essential to Democracy's all-out War Effort! If America is to serve, as the President has pledged it must, as the arsenal of the Democracies, every scrap of steel must do its bit. Most of it must go to the task of making guns and tanks and planes and ships wherewith to smother the resistance of the enemy. What little remains for essential civilian uses must be made to do its work as long and as thoroughly as possible, or replaced by some non-strategic substitute.

**BUT NO PRACTICAL SUBSTITUTE FOR STEEL AS A CONTAINER FOR MOTION PICTURE RAW FILM HAS EVER BEEN FOUND!** No other material combines the strength, lightness, ductility and resistance to moisture and flame which make steel the legally required container for shipments of nitrate-base film.

Therefore, our industry's film-cans must do their duty not once, not twice, but many times over. Once they have safely transported their load of film from factory to studio or laboratory, they must be rushed back to the factory to serve again and again. This return must be accomplished promptly, for a film-can that lies, empty, on a studio shelf is a slacker. It is wasting steel the country needs; it is delaying the shipment of film our industry needs.

Since last August, the film manufacturers have been buying back the cans in which their film was shipped. At that time, the situation was serious. Today, with the nation at war, the situation is critical. It demands the fullest cooperation of everyone in the industry.

Motion pictures are recognized as a wartime essential. So far as can be seen now, there seems little likelihood of any serious shortage in our basic raw material—film. But a shortage of the essential steel shipping-cans could

produce a precisely similar effect. If we keep the film-tins now in existence rotating, like an endless chain, bearing film from factory to studio, and then back to the factory for refill, there will be no such shortage.

THE ANSWER DEPENDS ON EVERY ONE OF US WHO USE FILM, WHETHER IN STUDIO, LABORATORY OR EXCHANGE. If we want to keep the industry's wheels turning, it's up to us to keep the film-cans rolling back to the film-makers for refilling! They'll do their part. Will you do yours?

AS the Academy Award season draws near again, we'd like to call attention once more to the traditionally short-sighted policy governing the bestowal of one of the more significant Technical Awards—the Award for Outstanding Achievement in Special Effects. As the rules stand now, this Award attempts to honor with a single plaque the year's outstanding achievement in Special-effects photography—and special-effects, sound, as well.

As we see it, there should by all rights be two entirely separate Awards, one for special-effects in picture, another for special-effects in sound. We realize that the Academy officials must necessarily seek to limit the number of Awards, lest they become too common to convey the distinction they should properly imply. But in this case, awarding a single token for both picture and sound is unfair to the many skilled workers in both fields. Once, perhaps, in a rare long while there may be a picture such as was "Spawn of the North" a few seasons ago, which combined genuinely outstanding achievement in special-effects work in both sound and picture. More often, it is precisely the reverse.

Furthermore, the committee which decides the bestowal of this Award is composed of men from both fields, and often art-directors, as well. And while each has, no doubt, from experience, some idea of what constitutes outstanding achievement in the other fields, he is hardly qualified to judge outstanding achievement outside his own specialty. We know of instances in which the Award was given, by the combined vote of the sound-technicians and set-designers, to a film which, while excellently re-recorded and using excellent trick sets, was none the less a very inferior example of special-effects photography, especially as compared to some of the other entries. The tables may well be reversed, with the photographer-art director vote favoring a poor recording job, and so on.

IF any one suggested seriously that Joe Louis defend his championship with one hand tied behind him, or that Joe DiMaggio bat with a cricket-player's

underhand stance, the country would ring with indignation at stupid officialdom's attempt to shackle an outstanding performer. But in some of our studios, something very similar seems to happen. They sign up the best directors of photography available to them—men who have made top reputations for individual skill and artistry. And, judged by the results on the screen, they seem to shackle these highly-paid artists by insisting that all photography on the lot conform to rigid, if perhaps unwritten, regulations dictated by the personal preferences of someone in authority. It is hard to say precisely who is the responsible official; in some instances, it may be a camera or laboratory head; in others, it might be some other official. But the result is the same; photographically speaking, one picture from one of these studios looks very much like other pictures from that studio. Any of them might conceivably have been photographed by the same man.

There may be a reason for it, but to us, a policy like that doesn't make sense. The studios hired these cinematographers because they had the reputation of being highly-skilled individual artist-technicians. They pay them generous salaries because, as the contracts specify, their services are "artistic . . . of a unique and irreplaceable nature." Moreover, the cinematographers of any major studio are sufficiently mature to merit being allowed to do their work without being told how to do it. Men who have been photographing major productions for twenty or thirty years are pretty thoroughly dry behind their professional ears.

It is to be granted that a reasonable coordination of materials and methods is desirable in any business on the scale of a modern studio, but in making motion pictures, artistic individuality is also a saleable commodity with box-office value. You would not ask Paul Muni to employ Lou Costello's acting technique just because both happened to be on the same payroll, nor would you insist that Bette Davis ape Carmen Miranda simply because both happen to be actresses. Why, then, should Cinematographers A, B and C be forced to limit themselves to closely similar photographic standards simply because all three are filming different pictures on adjoining stages of the same studio? If they do so, all three may well be pleasing some studio "brass hat's" idea of good photography; but if all please one man or group of men, they will as certainly be displeasing some other groups of the ultimate paying public, who have other concepts of what good camerawork is. But if each cinematographer could work freely, expressing his own artistic concepts, some portion of that studio's product would inevitably be pleasing to every portion of the vast audience whose quarters and half-dollars make our industry possible!



# PHOTOGRAPHY OF THE MONTH

In view of the lateness of many of the reviews which have appeared in this column during the last several months, and the fact that many excellent pictures have not been reviewed at all, we feel that a word of apology and explanation is due the readers of *THE AMERICAN CINEMATOPHIL*, especially since many of them have told us they rely on these reviews almost completely in choosing their screen entertainment. The fact of the matter is that during the last four months, since the so-called "consent decree" changing the methods of marketing pictures became effective, the major studios' previewing system has been completely disrupted. Where previously all films were previewed for the press immediately on completion, today the majority of major-studio pictures are not press-previewed until immediately before (or even after) they open for regular showing in a Los Angeles theatre, and many excellent productions are not previewed at all. Due to a shortage of first-run theatres in this area, and to the extended runs given many outstanding productions, this policy has resulted in serious congestion, and in many instances in "previewing" pictures which have actually played for a month or more in most other parts of the country, and in some instances even in London and other overseas centers.

To be perfectly fair, we believe that this situation is as galling to the studio publicity heads responsible for showing films to the press, and to the Publicity Directors' Committee of the Producers Association as it is to us and to our readers, but it seems to be a question with many intricate legal and business problems to be solved before a satisfactory answer is reached. Efforts are being made by all concerned to straighten things out; but until then we can only offer sincere apologies to our readers, and to the many Directors of Photography who do meritorious work and yet fail to see their films reviewed here.

THE EDITOR.

## HOW GREEN WAS MY VALLEY

Twentieth Century-Fox Production.

Director of Photography: Arthur Miller, A.S.C.

The results of the Academy Award balloting won't be known for another

month yet, but Arthur Miller's achievement in bringing this picture to the screen is sure to rank very close to the top in any listing of the best photography of 1941. To our mind, "How Green Was My Valley" rates as one of the two supreme examples of fine photography in a year which had more than its full share of outstanding camerawork.

The atmospheric keynote of this story of the Welsh collieries is realism—but it is realism leavened with richly human emotion and character. Bringing it to the screen, Miller makes eloquent use of the modern increased-depth technique. But he does it without lapsing into the brittle artificiality which has so often accompanied the use of this technique. His scenes have depth—often to a surprising degree—but they also have qualities of "good photography" which are all too often lost in attaining unusual depth of field. His scenes have depth, yes; but they also have a lifelike roundness, a soft plasticity of image, and a pleasing gradational range which have all too often been sacrificed in pursuit of depth. If in "Citizen Kane" a new photographic concept was born, in "How Green Was My Valley," it comes of age.

Miller's achievement is a great one, though, not simply because of his perfected use of this modern technique, but—and most importantly—because of the sensitive artistry with which his photography is attuned to the many-changing emotional moods of the story. There are moments of deep tragedy; there are other, thoroughly natural moments of light humor and tender romance; over all is an atmosphere of sombre foreboding, coupled with an indescribable nostalgia for a way of life that is forgotten. Miller's camera, compositions and lighting follow these moods and enhance them with flawless perfection. It is in no way detracting from the powerful story, from John Ford's inspired direction, or from the deeply moving performances of every one of the players to say that without the perfect sincerity of Miller's camera-treatment, "How Green Was My Valley" would not have been the deeply human document it is. Many critics have remarked on the humanness of this picture, and have commented on the way it seems not so much a staged photoplay as a reflection of life itself. In so doing, they have—by ignoring it—paid the supreme tribute to Miller's achievement in photographing a great picture so perfectly that even a hardened moviegoer forgets the camera and its works.

## CAPTAINS OF THE CLOUDS

Warner Brothers' Production (Technicolor).

Director of Photography: Sol Polito, A.S.C., and Wilfred Cline, A.S.C.

Aerial Photography by Elmer G. Dyer,

A.S.C., Charles A. Marshall, A.S.C., and Winton Hoch, A.S.C.

Special-process Photography by Byron Haskin, A.S.C., and Rex Wimpy, A.S.C.

It is a lasting pity that "Captains of the Clouds" could not have been released soon enough to qualify for this year's Academy Awards, for it is without doubt of Academy Award calibre, photographically at least. It is at once one of the technically finest and most artistically expressive examples of Technicolor camerawork we've ever seen.

On the "production" side of the picture, Cinematographers Polito and Cline have given "Captains of the Clouds" some of the most expressive mood-lightings this writer has seen in a Technicolor production. With no sacrifice of naturalness, Polito and Cline have given the picture very much the same mood-treatment and lightings they would have employed for the same action in black-and-white. The result is immensely superior to the characterless, flat-lit Technicolor so often seen.

The aerial camerawork by the redoubtable triumvirate of Dyer, Marshall and Hoch is another asset to the picture. There are many extremely spectacular flying sequences throughout the production, not only in the "bush-flying" sequence which comprises roughly the first half of the picture, but also in the later sequences in which the protagonists are shown as members of the Royal Canadian Air Force. They're photographed with a deceptively unobtrusive skill which is apt to make one overlook the real skill and courage which went into bringing these shots to the screen. The work of these three aerial specialists is also coordinated with such remarkable team-play that all of them might have been lensed by one man, rather than by three.

The special-effects camera contributions of Byron Haskin, A.S.C., and Rex Wimpy, A.S.C., are equally outstanding. Their projected-background work is particularly excellent, and the use of miniatures, and the like, for several airplane crashes, and especially in the climaxing sequence which the bomber rams the Messerschmitt pursuit-plane is an outstanding example of how this type of camera-trickery can be constructively employed for action which could not be filmed in any other fashion.

The Technicolor laboratory rounded out the perfect circle of achievement by turning out—at least in the print we viewed—the finest Technicolor print we've ever seen. In most Technicolor films, there usually seem to be at least a few scenes in which the color-balance seems off, or the definition lacking; but with the exception of a few scenes obviously shot rather late in the day, there was scarcely a frame in "Captains of the Clouds" which was not technically perfect.



## BALL OF FIRE

Samuel Goldwyn Production, RKO Release.

Director of Photography: Gregg Toland, A.S.C.

A few days before he left Hollywood to take up active service with the Navy, Gregg Toland remarked to the writer that in many ways "Ball of Fire" was the most difficult assignment of his career, but that in all probability neither the general public nor even the average technically-inclined viewer would realize it. He was quite correct in this; he has carried out his part of the assignment so well that even the technician is not apt to notice the inevitable problems created by having large groups of people (many of them elderly, non-rehearsing character actors) crowded into cramped, dark-walled sets, and constantly in motion.

"Ball of Fire" carries along the "pan-focus" technique Toland pioneered on "Citizen Kane," but, due to the nature of the story, on a more restrained scale in this amusing comedy. He has, I should say, considerably better luck with his three-dimensional compositions than he had in "The Little Foxes;" certainly, they are more easily followed and seem less studied. His modelling and tonal scale, though kept predominantly in the crisp, fairly high key the action warrants, are a further improvement over his previous release.

His treatment of the players is uniformly good, though he does not seem to have fared as well as usual in lighting Barbara Stanwyck. However, you probably won't notice this—the picture is much too good entertainment!

## THE LADY IS WILLING

Columbia Production.

Director of Photography: Ted Tetzlaff, A.S.C.

With Ted Tetzlaff, A.S.C., as director of photography, and the pictorially-minded Mitchell Leisen as director, it goes without saying that any picture would be pictorially interesting. "The Lady Is Willing" more than lives up to it, for story, atmosphere and setting combine for pictorial effect, of which director of photography Tetzlaff takes full advantage.

A great deal of the action permits highly pictorial low-key lightings which, in the main, he handles very effectively. In a few, however, he seems skating very near the danger-line of dropping into too low a key for even Columbia's amazing laboratory to handle. His compositions, too, are highly pictorial, though once or twice they seem a bit too studied, and in one or two (as in the effect-lighted shots of Fred MacMurray playing the piano) pictorially intrusive elements are allowed to intrude, apparently for added pictorial effect.

Tetzlaff's treatment of Marlene Dietrich is outstanding. For the first time in quite a number of pictures, she has an opportunity to be glamorous, and Tetzlaff's camera and lighting make the most of it. He has—Allah be praised!—

managed frequently to break away from the overly hard, extreme high-angle key lighting which for so long seemed the inevitable Dietrich trade-mark, and done so with extremely flattering results. Frankly, we've seen the lady photographed by many outstanding members of the camera profession, but not since some of her earlier pictures (made many more years ago than do a glamor-girl any good) have we seen her photographed to such good advantage. Miss Dietrich would be very well-advised, indeed, to insist that Tetzlaff preside over her cameras on her every future appearance.

## BAHAMA PASSAGE

Paramount Production (Technicolor).

Directors of Photography: Leo Tover, A.S.C., and Allan M. Davey, A.S.C.

"Bahama Passage" is one of the more disappointing major releases of the season. It brings some excellently-technicolored glimpses of interesting and unfamiliar locations, at least two very capable characterizations of a pair of unpleasantly neurotic people—and a definite sense of futility not at all in tune with the times.

Cinematographers Tover and Davey have nevertheless done a workmanlike job in photographing the picture. Quite a bit of the picture was photographed on location in the Bahamas—an interesting background, but by no means conditions conducive to the best of glamor-photography. Many other scenes had to be matched to these shots on the studio's process-stage. All told they and transparency process expert Farcot Edouart have done a remarkably fine job technically. However, it seemed to this reviewer that they had lost a number of opportunities to put visual mood and feeling into the picture—possibly because of the necessity for maintaining a consistently high-keyed and somewhat flat lighting, to get over the impression of tropical heat.

They seemed handicapped in their treatment of the glamorous Madeleine Carroll by some extremely poor make-up, and possibly by someone's insistence that in many scenes she should look sun-browned and wind-blown, which certainly did not add to her glamor, nor give much credibility to the hero's ultimate preference for her instead of the decidedly better-photographed Mary Anderson.

The brief underwater sequence—actually photographed underwater, we understand, through the well-known Williamson camera-tube system—is really interesting, as is the sequence in the underwater cave which, so we learn, was also exactly what it represents, and photographed in the Bahamas, and not a studio set. Farcot Edouart's handling of the projected-background ("transparency") scenes—especially his skillful blending of the foreground water and the background plate in the many sailboat scenes—is a real highlight of the film. The opening titles show a clever idea we'd recommend

to any amateur in search of a clever way to open a home movie on yachting.

## THE CHOCOLATE SOLDIER

Metro-Goldwyn-Mayer Production.

Director of Photography: Karl Freund, A.S.C.

MGM has been remarkably reticent about previewing many of its films these last six or eight months. Several which we understand to have been among the studio's best photographic jobs have gotten into release without our having an opportunity to see them. But among the ones we have seen, "The Chocolate Soldier" stands head and shoulders above the rest as the finest example of photography we've seen come of the MGM lot this last year. Karl Freund, A.S.C., richly deserves the Academy Award nomination this picture has brought him.

This production brings Freund something that doesn't too often come any cinematographer's way these days—a legitimate opportunity for highly pictorial, romanticized cinematography. And he makes the most of it. His lighting and compositions are a delight to the eye in virtually every scene—the sort of thing which makes the reviewer dust off such adjectives as "rich," "eye-filling," and that overworked word, "gorgeous." He makes frequent and eloquent use of effect-lightings, and throughout the picture maintains a visual uniformity and gradational range which have to be seen to be appreciated.

If you're interested in seeing some of the year's finest pictorial photography, and not too allergic to Nelson Eddy's dead-pan heroics and a leading lady several degrees inferior to Jeannette MacDonald, not to mention the rather implausible story re-hashed from the stagey old piece "The Guardsman," we can honestly urge you to see "The Chocolate Soldier."

## PACIFIC BLACKOUT

Paramount Production.

Director of Photography: Theodor Sparkuhl, A.S.C.

We understand that the Defense Authorities object strenuously to "Pacific Blackout" (made considerably before Pearl Harbor) because they say, it's a perfect compendium of things *not* to do in a blackout. We can understand that; if you've been in even a grade B actual blackout, you'll realize that cinematographer Sparkuhl necessarily had to show a good deal more illumination than would actually be visible in even a practice blackout. But then, even in the interests of realism, audiences could hardly be expected to come in to see only a jet-black screen! And if you take the picture in that spirit, you'll find "Pacific Blackout," both as photography and as entertainment, an excellent, fast-moving "who-dunit."

Director of photography Sparkuhl has certainly done an excellent job, and one beset with almost endless technical difficulties. Virtually the whole of the action takes place not only at night, but during a blackout. His task of suggesting

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# AMATEURS MAKE DEFENSE FILMS!

By WILLIAM STULL, A.S.C.

AMERICA'S cine-amateurs are turning their skill, their equipment and their unconquerable enthusiasm into the making and showing of films for Civil Defense! The huge task of training and mobilizing America's civilians to play their part in modern "all-out" war has created an unprecedented need for well-made instructional films on a wide variety of Civil Defense subjects, and for a tireless campaign to assure that these films be shown in every part of the nation. The various Government film units are doing their part to get this program under way. The professional film industry is mustering its forces to make and show Defense Films. And supplementing these obvious activities, America's amateur filmmakers—individually and through their organized clubs—can play a great and valuable part in bringing these necessary messages before their fellow-citizens.

America's amateurs are rising to the need, too. The first shock of Japan's knife-in-the-back attack on Pearl Harbor had scarcely begun to subside before THE AMERICAN CINEMATOGRAPHER began to receive inquiries from individuals and clubs throughout the nation, all asking the same question—"What can we do? How can we turn our skill and equipment to the benefit of our country in this emergency?"

Already they are finding the answer. At least one club—the progressive Long Beach (Cal.) Cinema Club—is entering active production on a series of films made at the request of local and State Defense Authorities. Other groups, not only in the immediately-threatened coastal-cities, but in the inland regions, as well, are following suit. Many others are standing by, ready to do their bit as soon as they find clearly what is needed.

With America's participation in the war still measured only in weeks, it is inevitable that a certain amount of confusion should exist in so enormous an enterprise as this country's Civil Defense program. But certain facts stand out already. Motion pictures are unquestionably going to play a key part in mobilizing the nation's civilians for their wartime duties, and training them in wartime safeguards. Professionally-made 35mm. films cannot carry *all* the load; such films, exhibited in theatres, can reach an enormous audience, but by no means the entire population. For this reason, 16mm. is going to be employed more and more extensively so that the messages may be brought home to Mr. and Mrs. America and their children not only in theatres, but in their schools, clubs, churches, factories and community gatherings. Some subjects, moreover, will require treatment in so detailed a manner that they would not be suitable for theatrical showing, no matter how necessary

they may be for instruction in factories, in Civil Defense meetings, and the like. Only with the ubiquitous 16mm. projector can these instructional movies reach out on a large scale beyond the theatres, and into the private life of the nation.

Exactly as much of the Civil Defense Program is being carried out on a volunteer basis, so, too, can much of this Civil Defense filming be carried out by volunteers from among the nation's amateurs. But if this is to be done, three primary cautions must be observed. The films produced must be authentic. Wasteful overlapping and duplication of effort must be avoided in so far as is possible. And finally—but of the greatest importance—the films themselves must be *technically good, if the whole idea of amateur participation in this vital program is not to receive an initial setback from which it could never recover.*

THE AMERICAN CINEMATOGRAPHER offers its every resource to aid in coordinating the Defense-film work of America's amateurs. As an initial step in bringing about this necessary coordination, we urge every amateur or club interested in participating in this patriotic work, to keep us informed of its program and progress, and of the equipment available for both making and showing 16mm. films. We urge every individual reader to fill out and mail us the questionnaire on this page to help build a systematic index of the nation's movie-making resources. This information will not be utilized commercially, but kept to aid all Defense Film agencies in their task of mobilizing whatever may be needed in any project of making or showing substandard film to aid the War Effort.

We are, at the same time, keeping in touch with national defense authorities to obtain fullest information as to what is already being done, and what is needed. In close collaboration with Saul Elkins, 16mm. film coordinator for the Los Angeles County Defense Council, we are working out the details of a system whereby authentic scripts on defense subjects, written by outstanding professional scenario-writers of Hollywood's Screen Writers' Guild and adapted, if necessary, to fit the requirements of 16mm. by members of our own staff, will be made available for filming by amateur groups of recognized picture-making ability.

One of the first, if not actually the first of these amateur-made Defense Films to reach the stage of actual production is a film on combating incendiary bombs now being made by the Long Beach Cinema Club. Immediately following the war's outbreak, President Robin Hadley appointed a special committee to guide the group's defense-filming activities. The 1941 President, Mrs. Mildred J. Caldwell, is Chairman of this com-

mittee, with Vice-President Dr. Franz Buerger, former Secretary Ray Fosholdt, and others as active members.

Mrs. Caldwell's committee began its work by contacting local and regional Defense Authorities to determine what type of picture was most urgently needed in her locality. As Long Beach lies in what is technically termed a "combat zone," and is a center of vital Defense Industries, it was determined that the most pressing immediate need was for a film dealing with the correct methods of handling incendiary bombs.

With local, county, state and national authorities collaborating to assure complete technical authenticity, the Club's Scenario Committee turned out the script, and the film got into production.

The necessary funds to defray the cost of the production, sound-recording, etc., are being raised by various Long Beach business groups who prefer, for the moment, to remain anonymous in their patriotic contributions. Construction of the sets and the fire-fighting technique is being supervised by the Long Beach Fire Department, of which Chief Claude Evans is not only locally in charge of this phase of Air Raid Precautions instruction, but also a very active member of the Cinema Club. The Fire Department's official cinematographer has been assigned a cine-camera and a supply of Kodachrome with which to photograph an actual fire to provide needed scenes for the film. Every effort is being made to ensure technical accuracy in every detail.

Club equipment of all types is being pooled to provide the best and most ample facilities for photography and lighting. Mrs. Caldwell has even purchased a Cine-Kodak Special to facilitate the making of some of the more intricate special-effects sequences, which would be difficult or impractical with less advanced equipment.

The picture is being shot silent, but using the 24-frame sound speed, as sound, in the form of offstage narration and sound-effects will be added to the completed production. Mrs. Caldwell has selected Kodachrome film, not only because the use of color may be expected to minimize the problems of grain, etc., in the event that the film might merit national distribution in either 16mm. or 35mm.

The completed film is to be submitted to the national Defense Authorities, so that if they desire, additional copies may be circulated nationally, as well as locally.

The experience this group has already had in launching its project affords several lessons which should certainly be heeded by any other group planning a similar activity. Common-sense provides a number of "do's" and "don'ts" for Defense Filmmers.

First of all, make your film technically



authentic—or don't make it at all. An "instructional" picture which is actually misleading is worse than no picture at all.

Therefore, no matter how eager you are to get into production, take time to check and re-check your facts with every possible authority—municipal, local, regional and, if possible, federal—to make absolutely certain not only as to what facts must be presented, but as to how they ought to be presented. Don't rely on your own judgment; it may be wrong. As an example, nine out of ten of us, in writing a script for a film like this one on fighting fire-bombs, after detailing the necessary and unfamiliar routine of bringing the incendiary blaze under control, would instinctively end up with an admonition to call the local fire department—which, in wartime, is precisely the one thing the civilian must *not* do in a raid!

Secondly, know beforehand that your picture-making technique is equal to the task. Making these pictures is no longer merely a sport or hobby: it is deadly serious business. If you can't do a good job, don't attempt it; step aside and leave the field clear for someone who can. Don't give America's really capable amateur filmers a black eye!

We, personally, have faith in the abilities of America's cine-amateurs. We've seen enough of their work to know that at their best, their capabilities are of virtually professional calibre. But Defense Officials cannot be expected to know this. Many of them have to be unsold on the idea that an amateur is just another well-meaning dilettante who isn't good enough to be a professional. One amateur who does a bad job on a Defense Film—one amateur who is so unsure of his technique that a good scene becomes an unexpected adventure—who exposes a hundred feet of film to get one acceptable five-foot scene, or who loses his head in the filming of crucial action, can by his bungling shut the door against the worthwhile participation of a hundred capable cinefilmmers.

Don't attempt production on a shoe-string. Just because your technical crew, players, and other helpers are unpaid volunteers, don't fool yourself that your only costs will be for film. Sound-recording, laboratory-charges, sets, costumes, properties and a thousand-and-one "incidentals" must be provided for, or you will find yourself with a half-completed film on your hands—and no way of finishing the job. By the time you've made, edited and titled your film, added the necessary sound, and provided for at least the first composite sound-and-picture print, you'll have an outlay of at least \$500 to \$1000 per 400-foot reel. If you or your immediate filming group can't swing this budget, don't expect to saddle your local Defense Council with it, and don't attempt to "promote" all of it from your local photographic dealers. They'll be glad to help, of course; but remember priorities have affected their business, too, and badly. Local Chambers of Commerce, service and business clubs, and individual business organizations can usually be persuaded to help underwrite

## Defense Filming Roll-Call

In order that we may be able to cooperate effectively with both Defense Authorities and with amateurs and clubs interested in taking part in such work, we invite all readers using substandard equipment to fill out this questionnaire and return it to us at once. This is not in any sense an official registration, but merely our own way of collecting information essential to efficient participation by amateurs in Defense Film activities. The information gained will be placed at the disposal of Defense Authorities and recognized amateur clubs with Defense Films to make or show, but will not be used for commercial purposes.

### A. Camera Equipment

1. 16mm? \_\_\_\_\_ 8mm? \_\_\_\_\_
2. Make and Model of Camera? \_\_\_\_\_
3. Camera-speeds? \_\_\_\_\_
4. Lenses \_\_\_\_\_
5. Recording Equipment? \_\_\_\_\_ Film? \_\_\_\_\_ Disc? \_\_\_\_\_
6. Tripods \_\_\_\_\_ Meters \_\_\_\_\_
7. Lighting Equipment \_\_\_\_\_

### B. Projection Equipment

1. 16mm? \_\_\_\_\_ 8mm? \_\_\_\_\_
2. Make and Model of Projector \_\_\_\_\_
3. Reel capacity \_\_\_\_\_ Lamp Wattage \_\_\_\_\_
4. Silent? \_\_\_\_\_ Sound? \_\_\_\_\_
5. Size and Type of Screen(s) \_\_\_\_\_

### C. Experience

1. Amateur? \_\_\_\_\_ 16mm. Professional? \_\_\_\_\_
2. How long have you been making movies? \_\_\_\_\_
3. Have You Made any Sound Films? \_\_\_\_\_
4. Are you accustomed to interior lighting? \_\_\_\_\_
5. Can You Operate Sound Projectors? \_\_\_\_\_
6. How much film do you shoot per year? \_\_\_\_\_ B&W? \_\_\_\_\_ Color? \_\_\_\_\_
7. Do you specialize in any type of subject? \_\_\_\_\_
8. Have you made business, commercial or educational pictures? \_\_\_\_\_
9. Individual or Club scenario productions? \_\_\_\_\_
10. Cine-Club Membership? \_\_\_\_\_ What Club? \_\_\_\_\_

### D. Personal Information

1. How much time could you give? \_\_\_\_\_
  2. Could you give it on an unpaid, volunteer basis? \_\_\_\_\_
  3. Could you aid in making films? \_\_\_\_\_ Showing them? \_\_\_\_\_
  4. Age? \_\_\_\_\_ Any Physical disabilities? \_\_\_\_\_
  5. Are you subject to Military Service? \_\_\_\_\_
  6. Married? \_\_\_\_\_ Single? \_\_\_\_\_
- Signature: \_\_\_\_\_
- Street address: \_\_\_\_\_
- City \_\_\_\_\_ State \_\_\_\_\_

an enterprise like this, once they're convinced of the need for such a film and the dependability of the people making it. But don't go into production before you know where your production costs are coming from!

Don't let local or personal rivalries creep in to jeopardize this work. The cause you're working for—of making your country and its citizens secure—is bigger than any individual.

Many clubs have a nucleus of two or three top-flight members of very nearly equal technical abilities, but between whom more or less rivalry exists. Sink those rivalries—or they'll sink your filming project! In a job of this magnitude, there is room for every capable, loyal worker, but none for the prima-donna who wants all the glory for himself.

Remember that team-work is the secret

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on the shelf to gather dust and deteriorate, either. Instead, it means giving them the physical protection they need so that in projection they won't get scarred up and worn out prematurely by projector-scratches, oil-spots, fingerprints, and so on.

First of all, I'd suggest that you make sure your projector isn't doing anything that will injure film. Clean the gate carefully with the aperture-brush the manufacturer supplied (if you still have it), removing any stubborn specks of hardened emulsion-scrap or dirt with your wife's orange-wood manicure tool covered with some soft, lintless cloth. Then take a few feet of fresh film—preferably film which hasn't been projected—and make a loop of it. Thread this through the projector and run it continuously for ten or fifteen minutes, and see if any scratches develop. If any serious ones do, I'd suggest you have the projector checked over by an expert, either at the factory or at some dealer in whose repair-shop you've genuine confidence.

wettest form, it has absorbed from 18 to 20 times its bulk in water, and is perfectly fluid. Unlike crystalline substances, the gelatine molecules (which the chemists classify as "colloidal," as they are microscopic and even sub-microscopic in size) absorb and lose moisture slowly, at least at ordinary climatic temperatures. This makes it possible for gelatin to exist in almost any conceivable state between hard solidity and complete liquidity, including, to be sure, semi-liquidity or jelly, as made famous over the radio by Jack Benny's "six delicious flavors."

This ability of gelatin to retain various degrees of moisture makes it an ideal carrier for the light-sensitive particles which make up our photographic emulsions. In its fully hydrated, or fluid, state, it permits a thorough, even admixture of the photosensitive elements, exactly as you can sweeten Mr. Benny's "Jello" to your taste by adding sugar with the assurance that the sugar will be completely mixed throughout every bite of your dessert.

## PROTECT YOUR FILMS!

By HENRY SHARP, A.S.C.

**N**OW that America is in the war on an "all-out" basis, we're hearing more and more on the subject of conservation. We're being asked to do entirely without some things (as I found the other day when I tried to buy a tire for my car!) and we're being asked to make existing supplies of many other things last longer, and do their work more thoroughly than ever before.

Fortunately for the home-movie maker, his 16mm. and 8mm. film isn't yet on that critical list of things he can't get any more. In all probability it won't be, either, for we seem to be pretty well off as regards most of its essential ingredients. But the matter of opportunity for further extensive shooting is a horse of another color. Those of us who live, as I do, in the coastal region have already learned that we're in what the Army classifies as a "combat zone," very literally packed (thank goodness!) with all sorts of things that can't be photographed. And all of us are finding that, what with working longer hours and putting in our spare time on various War activities (not to mention toting a Garand for \$30 a month, as plenty of us are doing!), there's increasingly little time for giving the family Filmo a workout.

That means that we'd do very well indeed to see to it that not only what films we may manage to shoot, but also the films we already have, are adequately protected so that they'll last longer. That doesn't mean leaving them

But making sure your projector is blameless is only half the battle. If you want to make your films last, you'd better take steps to remedy the various physical weaknesses which make them inherently subject to damage. We're really very fortunate today that there are a number of systems by which film can be, if not, perhaps, absolutely immunized from scratches and fingermarks, at least protected from all but the worst of them. And those "worst" abrasions should never occur under the handling of a really thoughtful cinemamaker.

There are two sides to this problem of protecting your film. One, appropriately, for each side of the film. Most of us seldom give much thought to the composition of the little strip of film that carries our pictures, but it's a surprisingly complex creation—the more so since it's only a few thousandths of an inch thick. The base of it is a strip of celluloid, 35mm., 16mm., or 8mm. wide, as the case may be. On one side of it is coated a layer of gelatin in which is carried the light-sensitive emulsion which records the picture and eventually, after appropriate processing, becomes the picture-image which is projected.

This gelatin which carries the picture is a remarkable thing. It's microscopically thin. It's transparent. It's flexible. And in its relations to moisture, it's unique. In an absolutely dry form, gelatin is a hard, dry solid. In its

In the comparatively soft, porous state in which it appears in the raw film we put in our cameras, the gelatin is solid enough so it doesn't disturb the dispersal of the light-sensitive emulsion grains as the film is wound from the feed spool to the take-up spool of your camera. When you have the film processed, this same characteristic permits the developing and fixing chemicals, and the color-developers of Kodachrome, to penetrate the emulsion freely, so that they do their work completely.

In the firmer state with which we are more familiar with photographic gelatin—the semi-hard state in which it appears on finished film—it does a remarkably good job of holding in place the millions of tiny silver-grains or (in Kodachrome) dye-molecules, which as long as they're in their right places, compose our finished picture.

But at this point the softness and porosity which had been such advantages in gelatin, become disadvantages. The gelatin, in the ideal state, contains between 1/6 and 1/2 water. That is just exactly right to keep it at the best balance between pliability and strength. If it loses more moisture than this, it becomes brittle. If it picks up more moisture, it becomes soft, and very easily scratched. In fact, if the process of picking up added moisture is carried far enough, the gelatin will actually disintegrate. This porosity also encourages defacement of the picture by oil, dirt

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SOME sage once remarked, "There is but the finest of lines between that which is funny and that which is corny." The origin of this astute observation is vague, in fact, there is no certainty that any sage ever really made any such remark, but if he didn't, he should have. Because so many a cine-ham, in his efforts to work humor into his epic, has tried so hard that the results of said efforts end up in something very much off-the-cob.

The term "corny" covers a wide territory, (see Goldwyn's "Ball of Fire") but generally speaking in connection with humor, it is accepted as meaning something that is old-fashioned, over-worked, over-done, painfully obvious, over-exaggerated, or out of place.

Planning a movie with a humorous premise is one of the toughest jobs that can be tackled by the average amateur. And by "average"—look out, here comes another English lesson—we mean the guy with a little 8 or 16mm. camera, maybe a projector, splicer and if he's managed to squeeze an extra drop out of the budget, a film-viewer. We don't include the boys with the trick sound equipment in this category, for, although such advanced amateurs unquestionably perform an able and worthy part in elevating the standards of the amateur movie-maker ranks, they represent an elite minority and not the general run of cine-hams, whose problems are the problems of the silent-film maker.

Their stuff appeals for its reception to the eye alone. There is no dialog or sound effects to work with. But the lack of sound should certainly not be looked upon as a limitation. After all, motion pictures are a visual medium and at best, dialog, sound-effects and music are supplementary to the action which is taking place. Some of the most powerfully dramatic as well as the most hilarious scenes in cinema history have been put over to the audience by means of pantomime, without the need of dialog, effects or music. So, in accepting his place as a maker of silent films, the amateur shouldn't labor under any delusions of limitation, but should utilize to the fullest extent the unlimited possibilities of pantomime in telling his story. Don't forget that a guy named Chaplin made some pretty funny comedies with no other sound accompanying them but the chatter of the projector.

But the average cine-ham, when plotting his humorepic, can't think in terms of Chaplin. After all, here was the world's finest pantomimist working with full-scale production facilities. If a lamp-post that would bend like rubber was needed, the prop department would build it. But Mr. Herbert Cine-ham, no matter how badly he wanted a rubber lamp post for some side-splitting gag in his film, would be out of luck. He couldn't get the rubber now, anyway, but even if the Japs would let him, it would probably take a month of his precious spare time and too much of his equally precious spare cash to build



## FUNNY---OR CORNY?

By CARL FALLBERG

the darn thing. So, it follows quite naturally that Herbert has to think down to his ability, finances, and facilities when dreaming up a continuity.

Being funny—really honest-to-goodness, sincerely amusing, just not corny—is a tough assignment in any part of the show business. And sometimes amateurs will rush in where even 35mm. producers fear to tread. The road to cinema hell is not only paved with good intentions but is also lined with cornstalks. We are assuming that the type of funny movie Herbert wants to grind out isn't one of those "Oh, look at that shot of Uncle Gus with grandma's hat on—ain't he funnier'n hell!" film-wasters, but a sincere effort to tell an amusing story in good continuity in as entertaining and convincing a manner as possible.

During the making of a 16mm. feature western, "Grizzly Gulch," which the writer co-produced, wrote and directed, the problem of what is funny came up time and again. We set out to make a sincere, believable story of a holdup and killing of a Wells-Fargo agent in a western mining town, and the bungled efforts of a thick-headed but well-meaning sheriff and deputy to solve the case. It was primarily intended to be a picture of an amusing vein, with just enough serious moments to keep the story solid and provide a good balance. Our premise of believability held us down to keep our humor believable, too, and so we had to steer clear of slapstick

stuff and try to get most of the humor out of our characters and the situations they found themselves in. Many was the gag that was tossed out because it didn't fit into the feeling of the picture, or was out of line, out of character, or just plain corny.

Consistency of feeling is probably the most important factor in any picture. It doesn't matter whether your picture is based on a slapstick premise, with plenty of pratfalls and pies-in-the-face, or depends mainly for its humor on character or situation laughs. One's as good as the other, as long as the laughs are there. The catch is to keep the thing consistent. If it's going to be a slapstick story, keep it that way to the finish. On the other hand, if you've struck a certain note of believability and sincerity in your yarn, do all you can to maintain that. There is no sadder sight to behold than a gag out of place. Its intended humor becomes only incongruous. In short, corny.

There are plenty of ways to make an audience laugh, ranging from pratfalls up thru the more genteel "character touches." The lowly pratfall certainly has its place, but it should be kept there. To depend on it for a laugh solely for what it's worth is dangerous. We recall a scene from an amateur production we once witnessed. It was a murder mystery, very well done, and presented in a serious, convincing manner. Well, we

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# Improvising Telephoto Lenses

By PAUL R. NELSON

FOR a somewhat indefinite period generally referred to as "the duration," most of us who take our cinematics seriously are going to enjoy the privilege of being unable to buy a lot of things we'd generally consider as photographic necessities. It's a real privilege, too, for the manufacturers of these temporarily hard-to-get cameras, lenses and accessories are doing their part for all of us by turning their resources to the filling of vital Defense Orders for Uncle Sam.

But the fact that we can't always walk into a dealer's shop and buy a tailor-made piece of equipment doesn't necessarily mean we got to do without it entirely. With a little ingenuity, most of us can improvise surprisingly effective substitutes which will take care of our needs until Victory once more gives us the opportunity of buying the regular manufactured product.

Take the matter of telephoto lenses, for example. They're a necessity in filming birds and other elusive denizens of meadow and forest. If you use a 16mm. camera for serious bird-photography, you need an assortment of lenses ranging in focus from two to at least six inches. And if your dealer's wartime stock doesn't include the ones you need, you can improvise substitutes which will fill the bill very surprisingly well.

A telephoto lens, you see, is not necessarily a special and mysterious type of lens. It is actually just a lens with a focal length longer than the type normally used for normal effects on a given

camera. Therefore you can get the telephoto effect you need by simply mounting *any* reasonably good lens of the desired focal length on your cine-camera. And so even if you can't get the cine-telephoto objective you want, you can get an equivalent effect by adapting any longer-focus lens, from any larger type of camera—including still cameras—to your movie outfit. This business of adapting lenses isn't a new trick; it has been used by still photographers since long before my time: but to many movie-makers it may come as a happy discovery, as it did to me.

A friend and I faced the problem of getting a series of telephoto lenses for our next summer's bird-filming. The first lens we needed was a good 2-inch telephoto. After some efforts to obtain a regular objective of this type, we improvised our own. In one of the local camera stores, we found a 2-inch Graf anastigmat which had originally graced the business end of a 35mm. DeVry newsreel camera. Ten dollars changed hands, and the lens was ours. An evening's work on my friend's lathe turned out a simple adapter which gave the necessary extension and made it possible to fit the screw-in mount with which this lens was equipped to the bayonet-type mount on his Cine-Kodak. The next week-end we tried it out close-upping some obliging seagulls—and we found we had an excellent telephoto—without priorities!

With this much success, we decided we could carry the same plan along to pro-

vide all the other telephotos we needed. The next one we picked up—also for the proverbial song—was a professionally obsolete lens which, I believe, had originally been used many years ago on some professional Bell & Howell camera. It had a working aperture of  $f:4.5$ , and a focal length of  $3\frac{1}{2}$  inches. The lens was so old neither of us could decipher the manufacturer's name, but it proved, in the tests we made after remounting it, to be a very satisfactory lens for our purpose.

To get the next longer-focus step, my friend turned to lenses which had originally been made for still-camera use. He had an Exakta still-camera, which was fitted with a Carl Zeiss lens of  $f:4.5$  aperture and a focal length of  $5\frac{1}{2}$  inches. It worked perfectly when screwed into an adapter fitting it to his Cine-Kodak.

Luckily for us, all of the lenses we adapted to cine use were already equipped with focusing mounts, so it was only necessary to make adapters which brought the lens to the correct distance from the film-plane, to give correct infinity focus, and thereafter focus by the scale already on the lens. It is important, though, when you're making your adapter, to check the infinity focus very critically if you want your lens to focus accurately on the closer calibrations. This can be done by placing a strip of ground celluloid leader in the aperture, and checking the image by means of a magnifying-glass and, if necessary, a dental mirror.

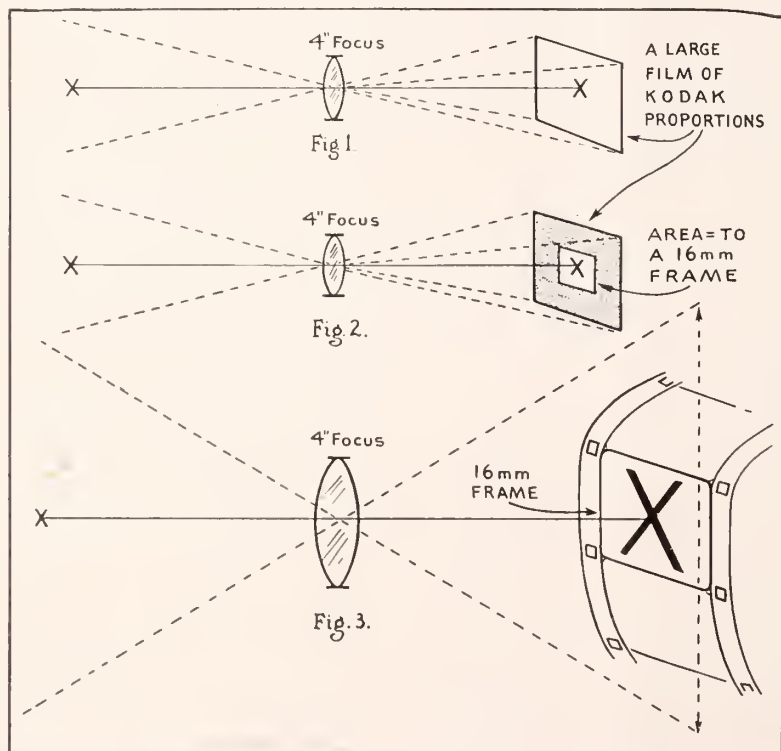
The camera we used was an Eastman Cine-Kodak, which has a special, bayonet-type lens-mount. In this design, the lens-mount consists of a base-unit which attaches to the camera by means of the bayonet-pins, and a collar threaded to receive the lenses. Our job was simply that of making a little tube, outside threaded at one end to screw into this mount, and inside-threaded at the other end so that the lens' original mount screwed into it, and of course of the right length to bring the lens into the correct focusing position with relation to the film.

If your camera is built for the more common type of screw-in lens-mounting, your task simpler yet. All you have to do is make a tube of the proper length which will fit your lens directly to the camera's threaded lens-opening. In a more or less general article like this, though, space doesn't permit giving precise dimensions for making these adapters, since there are several types of lens-mounts to provide for cameras with their front-plates at microscopically different distances from the film-plane.

An interesting aspect of the matter is the fact that an old or obsolete lens made for a larger camera, and properly remounted on a 16mm. camera will often give better results on the smaller camera than it ever did on the larger one!

The reason for this is that on the larger camera, this lens (like the 2-inch Graf we used) is generally covering very nearly the maximum area it can

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**T**HIS business of being a "camera-widow" is all very well for joking purposes—as long as you're not the "widow" in question. After that (as many girls who married movie-makers can testify) it grows too darn personal to be humorous. There's nothing funny in the realization that you're playing second fiddle to Hubby's *f:1.9* Cine-Kodak! Especially if your mirror gives you any reason for believing you're still reasonably young and not altogether unattractive.

Just the same, it seems to me we wives of movie-makers are a lot better off than we give ourselves credit for being. We can—if we will—take out an 'ive partnership in Hubby's movie-making hobby in a way that's impossible with many other sports and pastimes. If you've got the full-time job of managing house and kiddies, you aren't likely to have enough spare time to make your golfing skill interesting to a husband who shoots in the satisfying seventies. And I know plenty of girls who are too allergic to the sight of a freshly-killed deer or a creel-full of smelly fish to share hubby's pleasure in hunting or fishing. But movie-making is a horse of a very different color. A smart wife can find plenty of ways to participate and not only share but increase her husband's picture-making enjoyment.

Now mind you, I'm not saying you ought to share the job of running the family camera, or insist on making yours a two-camera family. If you find you've got the photographic instinct, swell. But if you haven't, don't let that keep you on the photographic sidelines. I know plenty of movie wives who couldn't to save their lives tell an *f-stop* from an *F-filter* who manage just the same to get every bit as much fun out of movie-making as their husbands do.

You see, there's a lot more to making good movies than just running a camera. Pictures have to be photographed, yes; but before that, they've got to be planned, and afterward, they've got to be edited and titled into something that hangs together and is interesting on the screen. There's plenty of room for wifely participation in some of these "behind the scenes" jobs.

If you've just been sitting back and placidly accepting the fact your more or less better half made movies, without giving much thought to how you could find yourself a part in his hobby, I'd suggest that you begin by really studying some of his pictures. Maybe you don't know enough about the fine points of movie-making to tell whether Hubby's pictures are technically good or not. So what? You're pretty well representative of the average audience's mentality, aren't you? And you can tell whether or not his films are interesting and entertaining, can't you?

With that as a start, you can begin to figure out where you can fit yourself in to help make his pictures more interesting and entertaining.

Maybe you'll find that although he can do a grand job of photographing and



## You Don't Have To Be A "CAMERA-WIDOW!"

By JEANNETTE REED

editing his pictures, he's rather weak on digging out interesting subjects and entertaining story-ideas with which to display his camerawork. In that case, you may find you can be really helpful to him by serving as a sort of "idea man" for the family production unit. In your spare time (if any!) you can plan out subjects and story ideas suitable for filming. And you can get those ideas everywhere. If you're going to take a trip or vacation, you can plan things ahead of time so Hubby's lens can concentrate not only on scenery, but also on personalized action that will supply a thread of story-interest to run through the scenic shots. In between, you can pick up ideas from magazine and newspaper short stories, cartoons—even from the funny papers—from which you can make shorts and comedies.

On the other hand, his weak point may be not so much ideas and shooting, but continuity. In that case, he'll certainly appreciate it if you can lend a hand as a combination script-writer, co-director and general continuity assistant to see to it that he gets the necessary close-ups and other angles needed to make his pictures flow along smoothly.

Another way you may be able to help is by persuading Hubby to let you take over responsibility for editing the family films. Lots of men who can plan and shoot swell pictures simply haven't the patience to settle down with viewer and splicer long enough to do a good job of editing. There are plenty of us wives, though, who even if we couldn't make head or tail of a camera, could simply eat up this painstaking, detail editing work if our husbands would let us. Their pictures would probably be a good deal the better for it, too; most of the articles on editing that you read in *THE AMERICAN CINEMATOGRAPHER* and other magazines agree in pointing out that since most filmmakers just hate to cut out their pet shots or to eliminate any photographically acceptable footage, there's a real advantage in having someone with a more detached perspective handle the cutting.

Titling is another point where you can help improve your husband's movies. Most husbands are sufficiently camera-minded to enjoy photographing their own titles—but a lot of them are pretty clumsy about composing the wording on

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# AMONG THE MOVIE CLUBS

## Inter-Club Cooperation

A lot is said about cooperation between the country's scores of amateur movie clubs, but little, other than the casual exchange of club bulletins, is done about it. Yet the possibilities—especially in wartime—of a closer cooperation between amateur movie groups in all parts of the country are certainly enough to merit concerted action on such a plan.

George Burnwood, one of the organizers of the very active 8-16 Movie Club of Philadelphia, has been campaigning actively in behalf of a National Association of Movie Clubs. Certainly there will be difficulties in carrying out such a project—but when have mere difficulties deterred America's enthusiastic movie hobbyists? We believe an association of this nature could work, and would bring all concerned many practical benefits. We'll gladly do our part to help it, if America's amateurs will get behind it too!

Among the immediate benefits Burnwood points out as possibilities in an active National Association of Movie Clubs are:

Formation of a national film-exchange for interchange of prize amateur films and complete programs.

National competitions for both Club and individual-member productions.

District conventions giving America's amateurs a chance to get personally acquainted.

Pressure (once normal peacetime trade is resumed) on manufacturers of 8mm. and 16mm. equipment for standardization according to popular demand of details (like 8mm. framing) not now covered by S.M.P.E. and A.S.A. standards.

Establishment of an amateur newsreel for inter-club activity and distribution.

To this we can add, in times like these, closer coordination of amateur Defense-filming activities; pooling of equipment by clubs in conveniently close localities; providing necessary stock-shots of other localities needed in amateur-made Defense Films; interchange of club-made scenario-films and other equally entertaining pictures for use in U.S.O. and similar showings.

We believe the idea has merit, especially in wartime. We gladly offer the full cooperation of THE AMERICAN CINEMATOGRAPHER in organizing such a federation, and getting it actively under way. How about it, you Club officials—?

The Editor.



Installation banquet of the Long Beach (Cal.) Cinema Club. Right, the Club's 1942 officers: Second Vice-Pres. Harry Ward; Treasurer Mrs. V. P. Whitely; Secretary Prudence Braklow, and President Robin Hadley. Photo by Julian Hiatt.



## New Club in Millville, N. J.

A new club, open to both 8mm. and 16mm. cinefilmmers, has just been established in Millville, New Jersey. Its name is the Millville Society of Cinematographers. Its Secretary is Arthur Radcliffe, 513 North 7th Street, Millville, N. J. Its meetings are held the 3rd Tuesday of each month. All 8mm. or 16mm. amateurs in this part of the State are invited to participate in the Club's activities, and cooperation from older, more established clubs and their officers will be sincerely welcomed.

ARTHUR RADCLIFFE, Secretary.

## Gadget Night in Utah

The January meeting of the Utah Amateur Movie Club, Salt Lake City, Utah, was designated as "Gadget Night." All members were urged to bring their pet cine-gadget to the meeting to be shown and explained to their fellow-members. Balance of the program included a technical discussion of shutter-speeds, parallax and lenses, under the direction of "Prof." Al Morton, F. K. Fullmer's "I Have A Problem" question-and-answer interlude, a color cartoon, and as feature of the evening, the Utah premiere of "Gold is Where You Find It"—not the Warner Bros. 35mm. epic, but a strictly non-theatrical version loaned by the Philadelphia 8-16 Movie Club.

TED GUERTS, Secretary.

## War Films For L. A. Cinema

The January meeting of the Los Angeles Cinema Club was highlighted by the presentation of three films of unusual timely interest. Two Castle 16mm. soundfilms, "Japs Bomb U. S. A." and "News Parade of 1941" were shown through courtesy of Bell & Howell, and the 3-reel prize-winning Kodachrome film "Beyond Manila," filmed in the Philippines by W. G. Hahn, of Baguio, P. I., was shown through the courtesy of Editor William Stull, A.S.C., of THE AMERICAN CINEMATOGRAPHER who, with Earl Memory, acted as projectionist for the evening's films. The balance of the program included screening of a number of additional entries in the Club's 1941 Contest. Among those screened were "Not the American Way,"

a novelty by Dr. Roy E. Gerstenkorn; "Retrovision," by Gilles de Tremaudan; an unusually fine Kodachrome scenic by Mrs. Mildred Zimmerman, and a number of other excellent films.

RAYMOND McMILLIN, Secy.-Treas.

## St. Paul Screens Rushes

Scheduled feature of the January meeting of the St. Paul Amateur Movie Makers Club was a preview of the "rushes"—uncut—of a 200-ft. 16mm. color film made of the members at the Club's December meeting by Honorary Member William S. Yale, Chief Cinematographer for the Great Northern Railway. This film was made in miniature Hollywood fashion, with every scene rehearsed before shooting, and lighting checked with exposure-meters, Eastman Color Temperature Meter and Harrison Color Meter. Most of the scenes were shot at  $f:2.5$  to  $f:2.7$ , using two 3,000-Watt and one 750-Watt Bardwell-McAlister Keglites and three 2,000-Watt floodlights. The picture will later be given a formal premiere in its completely edited form.

By way of competition, club-member Harold Smith, who "covered" the same action in 8mm., promised to preview his "rushes," as well.

Speaker of the evening was to be Russell Hamilton, who was to talk on correct exposures and the use of light-meters and titling.

Other film fare was a 500-foot, 16mm., travel-film of Arnold Elvrum's trip to New Orleans and Katherine Fischer's showing of a 100-foot 16mm. film taken by her father on a trip to Catalina Island, Calif.

A joint meeting with the Minneapolis Cine Club is planned for February.

## Long Beach Makes Defense Films

Authentic information on what to do in the event of an air-raid, how to handle incendiary bombs, and how to administer first aid will be the subjects of the first three films to be filmed by members of the Long Beach Cinema Club for the Defense Council, it was announced by newly-installed President Robin Hadley.

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# ...THE SHOWCASE...

## Wanted—Film Spools!

With steel, aluminum, and most other metals vitally needed for the manufacture of war materials, those by-products of photography, the lowly "tin" film-spools, the film-can, and the small, light-weight projector reels on which 16mm. and 8mm. film comes back from the processing laboratory, have taken on a new importance. Materials for making these items are on a priorities basis, and if film is to be kept flowing to America's cameras, film-spools, reels and cans must be returned to the film-makers for re-use.

To encourage this necessary conservation, the Eastman Kodak Company has set up the following program for the return of these products.

Both cine and still-camera clubs are urged to establish a convenient bin in which their members may deposit roll-film spools, Cine-Kodak camera and projection reels, film-containers, and the like for shipment to the factory.

Shipments of these collected metal products should be made to the Eastman Kodak Co. in lots weighing from 25 pounds up. Shipments up to 40 pounds should be made by prepaid parcel post, and the club will be repaid the shipping costs. Shipments over 40 pounds in weight should be made by collect freight. The outside of each package should state the contents. All shipments should be addressed to Eastman Kodak Co., Kodak Park, Bldg. 64, Rochester, New York. Name and address of the club should appear clearly on the outside of the package.

The following metal items are urgently desired, and will be compensated for at the accompanying allowance rates. Kodak rollfilm spools: \$5.00 per thousand; Kodak filmpack cases: \$25 a thousand; magazine-retorts for No. 135 Kodak minicam film: \$20 per thousand; aluminum containers for No. 135 film: \$10 per thousand; 8mm. and 16mm. light metal projection-reels (all types and sizes) 1c each; 8mm. and 16mm. camera-spools: 5c each and up, according to size; cine-camera spool cans: ½c each and up, according to size.

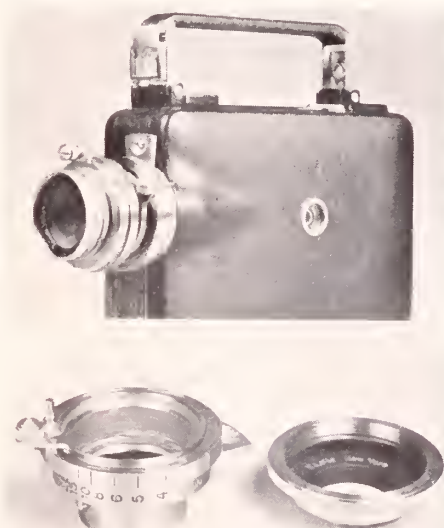
Shipments need not be made in collected batches of 1000 units, but simply in collections of 25 lbs. or more.

If there is no club in your town through which to make these returns, your dealer will cooperate. No matter how you do it, send those film spools and cans back to work, and keep America's cameras clicking!

## Ross Lens Tissue

With the disturbance across the Pacific cutting off the supply of Japanese lens-cleaning tissue, the introduction of an American-made lens-cleaning tissue of high quality is particularly significant. The new product is trade-named

Ross Optical Lens Tissue, and is stated to have been tested and approved by Carl Zeiss and Bausch & Lomb experts. Ross tissues, according to the manufacturer, are new, specially processed, lintless, strong, and highly absorbent to moisture and fingerprints. The tissues are sold in two sizes—the "Standard" package, 100 sheets of 3x5-inch tissues priced at 35c, and the "Economy" package of 1000 4¼x5-inch sheets, priced at \$1. Both packings come in a handy pliofilm pouch. The manufacturer is A. Rosmarin, 2117 Eighty-third Street, Brooklyn.



## Leica Lenses for Cine Cameras

Cine-camerists — 8mm. as well as 16mm.—who also own Leica 35mm. miniature cameras can now employ the longer-focus lenses from their minicams as telephoto lenses for their cine outfits. E. Leitz, Inc., 730 Fifth Ave., New York City, have just announced two adapters which will fit any Leica lens to most substandard cine-cameras.

One of these adapters permits Leica lenses to be used with all cine-cameras fitted with "type C" screw-in lens-mounts. Cameras of this type include the Filmo Autoload Speedster and Automaster magazine 16mm. cameras, Filmo 70 and 70D-A, Bolex, and Keystone, while, with the addition of another adapter made by Bell & Howell, the Leica "type C" adapter can also be fitted to 8mm. Filmos with their special bayonet-type lens-mounts. In use, the Leica Cine Adapter is screwed into the cine-camera's lens-mount and the Leica lens is, in turn, inserted into the adapter, after which the lens is focused in the usual manner, employing the focusing scales engraved on the lens.

The other type of Leica Cine Adapter is made exclusively for the two maga-

zine Cine-Kodaks (8mm. and 16mm.), and is necessarily more elaborate. It has the requisite bayonet-type mounting to enable it to be fitted into the Magazine Cine-Kodak's special lens-mounting, and is also provided with its own focusing movement and calibrations. It can only be used with the collapsible-mount 50mm. Leica lenses (Hektor, Elmar, Summar and Summitar.) In use, the mount of the 50mm. Leica lens is locked at infinity, and then collapsed. The lens is then fitted into the adapter through the bayonet flanges on the base of the lens-mount. Focusing is accomplished by the focusing movement of the adapter.

Two models of this adapter are made: one for the 50mm. Elmar lens, and the other for the 50mm. Hektor, Summar and Summitar objectives. On special order an additional attachment can be fitted to this model, at the factory, permitting it to be used also with the 90mm. Elmar lens or the 135mm. Hektor lens.

## 8mm. in Filmosound Library

In response to demands from 8mm. users, the new 1942 catalogue of recreational films offered by Bell & Howell's Filmosound Library includes the addition of an 8mm. film-rental service. Initial listing includes 75 subjects in black-and-white and color, including features, cartoons, sport shorts, travel-reels and novelties. Rental charges are 75c per reel for monochrome subjects, \$1.50 per reel for color.

## Fototint Trial Offer

If you're interested in tinting monochrome movie scenes or coloring black-and-white titles for use in Kodachrome pictures, you'll be interested in a special trial offer now being made to introduce Mansfield "Fototints" to movie-makers and minicamerists. A special trial-size packing of these popular tinting compounds, which need only be mixed with water for use, and containing sufficient Fototint to color 100 feet of movie film. Six trial-size capsules, one each of Sapphire Blue, Amber Brown, Emerald Green, Royal Purple, Fire Red and Sunlit Yellow, all for 25c, may be obtained by writing Mansfield Photo Research Laboratories, 701 So. LaSalle St., Chicago.

## Silver-Lined Blackout Bulbs

Designed for blackout lighting in air raids, the new Wabash Blackout bulb just announced by the Wabash Appliance Corporation, Brooklyn, N. Y., provides downlighting in a soft beam of blue light that is safe for indoor visibility during blackouts. The bulb is lined inside with a pure silver reflector lining that hides all filament glare and projects the light downward. Light-

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# 16mm. BUSINESS MOVIES

## OVER PINE MOUNTAIN TRAILS

Public informational film on lumbering; 1100 feet Kodachrome, synchronous Sound-on-Film, direct 16mm. recording.

Presented by: Dierks Lumber & Coal Co.  
Produced by The Calvin Company.

Here is a 16mm. business-film which, with the elimination of a few "plugs" for the sponsor, could be enlarged to 35mm. and given a successful release in the country's theatres. After a somewhat slow start, the film gets under way to tell interestingly how a big lumber company transforms trees into fine, finished lumber-products, ready for delivery to America's home-builders. It is an interesting and unfamiliar story, interestingly told.

From the technical viewpoint, "Over Pine Mountain Trails" is surpassingly fine. We thought the same producer's "Unsung Heroes" was about tops in 16mm. commercial production—but this one tops that! It has literally every professional embellishment—several sequences of synchronized dialog, synchronized sound-effects throughout, and an impressive array of "wipes," many of them of the sort usually seen only in Hollywood's 35mm. theatrical films.

The photography is exceptionally fine. Its uniformity of exposure and color-balance have seldom been exceeded—or even equalled—in 16mm. Kodachroming. The uncredited cinematographer repeatedly evidences a very fine sense of composition, not alone for pictorial effect, but (as in the "lumber buggy" sequence) as a means of subtly enhancing the sponsor's message.

Many of the scenes must inevitably have been made under difficult conditions. For example, the logging sequences, made in the deep forest, certainly offer problems in lighting, but they have been handled excellently. The treatment of the sequences inside the various lumber mills offered another problem in lighting, and they have been handled as capably as any Hollywood crew could do. This, incidentally, is one of the very few films made under such conditions that we've seen which did not show any signs of off-balance color such as follow the use of high-wattage standard Mazdas with or in place of Photo-floods.

In only one instance can we criticize the lighting. This is in the sequence showing the pioneer settler and his wife selling the timber cruiser logging rights to his land. This sequence, apparently made in the producer's studio, seems lit too flatly, and with no attempt to use back- or rim-lighting, and the like, to aid in separating the people from the background, and with little or no modelling on the players. The use of close-ups for at least some of the dialog in this sequence would have helped it, too.

The direct-16mm. sound-recording is excellent, and the way the original

sound, sound-effects, narration, music, etc., have been re-recorded to form a final, perfectly corrected track is truly professional in its execution. We've repeatedly been able to put the film on the projector and run it completely through without even a thought of touching the sound controls—something impossible with a track which has not been perfectly re-recorded. On at least two occasions we've run "Over Pine Mountain Trails" immediately before or after films with sound-tracks reduced from 35mm. originals: this direct-16mm. recording proved itself so far superior to 35mm.-reduction that it vindicates everything the 16mm. enthusiasts have ever claimed for direct-16 recording.

## THE POWER BEHIND THE NATION

Documentary on coal production; 1400 feet Kodachrome, sound.

Presented by the Norfolk & Western Railway.

Produced by: Waldo E. Austin.

This production picturizes one of the most interesting and little-known industrial operations on our "home front," and does it in a very interesting fashion. He keeps film and "story" moving along at a much better—and more interesting—pace than you see in most business films.

His handling of the very difficult sequence deep in the heart of a coal-mine is one of the real highlights of the picture. Faced with the proverbial problem of photographing "a black cat in a coal-mine," or at least dark-clad men using black tools against a background of ebony-dark coal, he has managed surprisingly well with his lighting and exposure-values.

Some improvement could be made in his exteriors, however. Many of them involve the always critical exposure problem of photographing sooty black coal-cars and coal-handling machinery, and there is a rather definite tendency toward underexposure, as though, perhaps, he had taken his meter-reading on the scene before the black car or train entered, and not made sufficient compensation for its lesser reflective value. Quite a number of the exteriors, too, appear to have been filmed too close to the noon hour, when there was nothing but a harsh top-light. They would have been greatly improved had they been made earlier or later in the day, when the sun's angle would throw more light slantingly into the machinery, and produce cross-lighted modelling in the landscape long-shots.

The final sequence, showing the amazing process by which an entire railroad-car full of coal is picked up, overturned and dumped into a chute through which its cargo slides gently into the hold of a steamer is extremely interesting. It suffers, however, from uneven exposure

and from a lack of the detailed close-ups which would make its meaning more completely clear. Even though the film is completed, it would be well worth while to make some of these interesting close-ups and insert them. We'd also like to see a new print of the film, made by more recent duping methods on the new Kodachrome duping stock, which was not available when the film was produced.

Another suggestion would be more rhythmic cutting of the sequences in which the narration details the many uses of coal, so that the screen effect is faster-moving and more like a montage, with the picture-images coming on the screen at the same time the narrator's voice mentions them. And, as a railroad enthusiast, this reviewer would personally have liked to see more stress laid on the railroad's methods of transporting the coal from mine to consumer—the why and wherefore of the great articulated locomotives and the multiple-unit electric ones which haul mile-long trains over the mountains with such efficiency. We've an idea the public might also like a little more of the why and wherefore of this, too.

But "The Power Behind the Nation" rises well above its technical limitations. It is so interestingly handled that even a technically-minded viewer is not too conscious of these minor shortcomings, and is, instead, absorbed in the unusual story told.

## INSIDE INFORMATION

Sales-instructional film, 400 feet black-and-white, sound.

Presented and Produced by Caterpillar Tractor Co.

A really excellent sales film which very thoroughly tells the story of "Caterpillar" construction and performance. It graphically shows some of the processes of construction, and explains them both in picture, narration, and some excellent animation sequences showing the principles of the Diesel motor, and the operation of various components which can be shown clearly only through this means. The points are ultimately driven home with characteristically excellent shots showing the company's products performing in the field, under difficulties and carrying loads that stagger the layman's imagination.

Technically, the film is first-rate, as might be expected of a firm which has maintained its own motion picture department for nearly twenty-five years. Photographed and recorded in 35mm., camerawork and processing are both excellent, though we'll admit we missed the added touch of color. A number of the scenes showed excellent pictorial effectiveness, as well. The recording (35mm.) was good, but as is so often the case, probably lost quite a bit in the reducing operation; we may be biased on the subject, but it's our opinion that direct-16mm. recording is generally far preferable for business-films which are to be shown in 16mm.



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# HERE'S HOW

## Professional Tricks

How were the following accomplished?

1. Incorporating the 16-frame Bill Hart picture into the movie scene in "One Foot In Heaven?"

2. Incorporating the color slides into the black-and-white movie scene in "The Birth of the Blues?"

3. Usually twin-sister scenes such as those in "Keep 'Em Flying" are accomplished by masking off certain areas of the scene, but in some shots in this picture there was considerable overlapping of action. How was this done?

4. Interior scenes of automobiles usually look as though the camera is perched up in front of the automobile and yet with the background or foreground moving one wonders how this is accomplished without vibration affecting the camera? How is this done?

WM. MADDEN.

1. Usually when 16-frame scenes have to be incorporated into a modern film made and shown at 24-frame sound speed, a special print is made from the original 16-frame negative, printing the image of every alternate frame on two frames instead of one, to lengthen the footage and make the action move more normally, though sometimes a little jerkiness is still noticeable. In the case you referred to, however, this was not done. The original negative was used "as is." The Warner Bros.' Special-effects staff were simply lucky in this case, for the original negative had apparently been photographed at a speed rather above the normal 16-frame speed—probably 18 or 20 frames or more per second. This was sometimes done by cinematographers in the later silent-picture period to offset the speeding up of action when theatre-managers, to be able to get in more shows (and audiences) per day, used to have their projectionists run their machines well above the correct, normal speed. By the time sound came in, many silent pictures were already being filmed at very nearly 24-frame speed.

2. Putting the color slides into the black-and-white scene in "Birth of the Blues" was accomplished in the printing. The scene itself was photographed in the normal manner, in black-and-white, with the screen area matted off. The slide was photographed in Technicolor, probably on a titler, and with the camera so positioned and matted that the slide image was the right size to fit in its place on the screen-area of the previously-photographed black-and-white scene.

Then a normal black-and-white print was made of the black-and-white scene. In this, the screen area was left clear. The color part of the picture was put in by the usual Technicolor printing method, using three color-matrices made from the original Technicolor negatives of the "slide." These act like rubber-

stamps, each transferring a dye-image of one primary color to the desired area; when the three transfer-printings are complete, the result is a full color print. Since both parts of the composite shot were matted off, the Technicolor image was printed only on the "screen" area of the black-and-white print, giving the result you saw.

3. Twin-sister scenes in which the "twins" must "cross" each other, or shake hands, and the like, are often done by using a double for one twin (usually the one nearest the camera) and making sure that twin keeps his or her face away from the lens. During recent years, many of these shots have also been made using the projected-background process, projecting the image of the more distant twin onto a large, translucent screen behind the actual actor. Both methods seem to have been used—and used skillfully—in this instance, with scenes made by the various methods carefully intercut.

4. In most modern pictures scenes showing the players apparently riding in a moving car or motorboat are made on the studio stage by the projected-background process. They sit in a "prop" set consisting only of the parts of the car which will actually be seen on the screen. Behind them is a big translucent screen, upon which is projected the desired background scene. The foreground camera and the background-projector are electrically interlocked, so that their shutters open and close together. If the various elements of perspective, lighting, etc., are properly coordinated, the resulting composite scene is not only as good as if it had been photographed with the camera perched atop a real car's front bumper, but actually better. Photography and lighting are perfectly controllable, there are no outside noises to interfere with sound-recording, and the whole thing can be done easier, and at less cost, than would be possible otherwise.

## Meter Angles

1. The Weston Cine Meter has a 30° angle of acceptance to match the 1-inch lens on most 16mm. cameras. How would you suggest using the meter to eliminate (if possible!) guesswork on wide-angle scenes or long-shots with a telephoto?

2. When the Weston Cine Meter's baffle is open, the angle of acceptance is doubled, making a difference in the meter-reading of about one stop. What useful purpose is served by this increase in light registration? Isn't it confusing, particularly on long-shots where poor light requires the baffle to be open?

3. What is the angle of acceptance of the Norwood meter?

S. R. BARLOW.

1. Our usual method of using our Weston Master meter for scenes made

with lenses having a narrower or wider angle than the meter's 30° acceptance is simply to come closer to the subject, or back away from it, until the area covered by the meter corresponds reasonably well to that scanned by the camera's lens. On close shots of people—regardless of lens—we never take our reading from camera-position anyway, but from a point near enough to the person so the meter reads only on the person, or preferably only the face, since that is by far the most important factor in the scene. Also, in a cross-light, we angle the meter, in taking such a reading, so that it reads more of the shadow-side than the highlight side. It's given us perfect results so far!

2. The purpose of moving the baffle on Weston Cine and Master meters is so that they can be used in low illumination levels, either indoors or out, where otherwise they couldn't be made to give a reading. Some of the earlier models had a small button to be pressed, which would increase the meter's sensitivity; but this necessitated mental recalculation of the reading, and proved confusing to some users, so the present system was introduced. Without some provision for these low-level readings, users of modern fast film and lenses would find that they could make pictures in light so poor the meter wouldn't give them any reading. Again, the simplest remedy for the trouble you mention is to take your reading so that you know the meter's 60° acceptance-angle coincides roughly with whatever angle your lens may be covering.

3. The acceptance-angle of the Norwood meter is extremely wide—probably, I should say, around 150° or more. But this angle of acceptance is utterly different from that of any reflected-light meter. With the Norwood meter, you take your meter-reading by placing the meter in the same position as the subject (preferably the subject's face) with the hemispherical collector over the cell pointing toward the camera. The hemisphere reproduces the approximate three-dimensional contour of the face, and averages up all the light falling on the subject—on both shadow and highlight sides, and takes into consideration, too the effect of any cross, back or top-lighting actually affecting the subject. In other words, the meter takes into consideration the angle of the light as it affects the camera and exposure, as well as the overall quantity of light itself.

## British Defense Films in San Francisco

The British Library of Information has appointed Photo & Sound, Inc., San Francisco, to distribute a series of 10 ten-minute shorts on civilian defense, produced by the British Government.

While these films were primarily produced for British audiences, they are quite suitable for American civilian defense groups, since they treat problems common to both countries. The films are released on 16mm. sound-film.



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*Gregg Toland, A. S. C.*



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## Defense Films

(Continued from Page 69)

of successful movie production, and many an outstanding Hollywood picture has been made by men and women who were big enough to forget personal animosities in favor of sincere effort for the sake of the picture, even though director, cinematographer and star might thoroughly despise each other outside of working hours!

Often there may be two or more groups or clubs in a single locality. In peacetime, good, healthy rivalry between such groups is to be expected. But that rivalry must not be allowed to weaken their participation in this phase of the War Effort. If "the other club" is getting under way with a needed Defense Film, don't rush blindly into production with a similar one just to beat the other fellow to the punch. If you can't work together, pooling your skills and resources to make one really outstanding picture, at least be original enough to choose some other, necessary subject so that the Defense Effort may have two good pictures it needs, rather than a pair of anemic carbon copies of a single idea.

The range of Defense Subjects in need of filming is almost endless. There are such obvious Air Raid Precautions films as the Long Beach group's film on incendiary bombs, already mentioned, and others like "what to do in an air raid," "what to do in a black-out," "gas decontamination," "first aid," and a whole possible series on the detailed duties of Air Raid Precautions workers in your own community. Then there are other important topics which should be covered, such as films instructing the average patriotic man and woman what he or she can do to help in this emergency; films on safeguarding school children; films showing how to aid in the national drive for conservation, not only of tires and metals, but of foods, scrap materials, and even paper and string. An interesting and highly constructive series of films could be made through cooperation between amateur cinema and model airplane clubs, using scale-model airplanes to show how to identify our own and enemy aircraft. There are—but the list can be extended almost to infinity. When a nation of 130,000,000 people, like ours, gets actively into modern "total" war, the range of subjects which can advantageously be brought to widespread attention by means of 16mm. films is so great that no single producing group—not even Hollywood's huge professional film industry—can completely exhaust the possibilities, especially when, as now, time is so much a factor.

Inevitably, the professionals, in and away from Hollywood, will carry the lion's share of the Defense Film load. But there is a definite place for the patriotic and capable 16mm. amateur. There are some subjects which certainly for local distribution, and in some instances for regional and national showing as well, will lend themselves best to the accustomed silent-picture technique and the intimately localized treatment only the amateur can give. This writer be-

lieves America's amateurs are not only willing, but able to do their full share in this great undertaking. Let's work together, all out for "all-out" Victory! END.

## Movie Clubs

(Continued from Page 74)

"We'll make the pictures and turn them over to the Defense Council to be shown before schools, clubs, and other organizations," said Hadley. "We'll also furnish projectionists to run our pictures wherever needed."

The Club's 1942 officers were installed at a dinner-dance January 8th, at which retiring President Mildred J. Caldwell was presented with an engraved gift from the membership, in appreciation of her outstanding service which won the Long Beach Cinema Club recognition as the nation's outstanding amateur club. The occasion was reported as the first time any member had ever seen Mrs. Caldwell rendered absolutely speechless.

The Club's January 21st meeting featured "Beyond Manila," a prize-winning film from the library of THE AMERICAN CINEMATGRAPHER, which was greatly enjoyed because of its timely interest. A very clever picture, "Epansamandus," a Sam Tait production, was also well received, as were "Sierra Vacation," by Ellen Thunnell, and "Califorina Flowers," by Clare Grubb. Dorothy Dingley and Alma Workey were welcomed as new members.

PRUDENCE BRAKLOW, Secretary.

## Postpone Philly Banquet

At the January meeting of the Philadelphia Cinema Club it was decided that because of the national emergency the Annual Banquet usually held in March would not be undertaken this year. It has been the custom to exhibit at the banquet the three best movies taken by club members. As this will not be possible this year, cash prizes are being offered to the photographers who, according to the club-members' ballots, produced the three outstanding films.

January offered the last opportunity to exhibit films for the Contest, and at that meeting two eligible 16mm. Kodachrome films were shown. One was by William W. Chambers, and showed Valley Forge as it was years ago, and as it is today. The other was by Walter Gray, entitled "Bar Harbor," and portrayed the scenic beauty of Mt. Desert Island's shores, headlands, lakes and mountains. An 8mm. film on the National Parks was exhibited by new member Carl F. Keimeck.

B. N. LEVENE, President.

## Contest for L. A. 8mm.

The Annual Banquet and Contest of the Los Angeles 8mm. Club, postponed from December due to threatened black-outs, was finally held in January, but during the daylight hours of a Sunday afternoon, to the distress of fashion-plates Claude Cadarette, Johnny Walter,

and sundry lady-members and wives who enjoy wearing formal attire. Special pleasure was given to the occasion by the presence of 1940 President Bill Wade, returned from Kansas City and Denver to make his home once more in Los Angeles. With Past President Wade and Retiring President A. J. Zeman sharing honors, the 1942 officers—John Walter, President; A. B. Callow, Vice-President; Harold McEvers, Treasurer, and Gertrude Millar, Secretary, were formally inducted into office.

The big moment of the banquet was as usual the announcement of the winners of the Club's Annual Contest. This—also as usual—was handled by Honorary Member William Stull, A.S.C., Editor of THE AMERICAN CINEMATOGRAPHER, who with a committee of A.S.C. members had handled the judging. He built up almost intolerable suspense by beginning at the 6th prize and making his announcements in reverse order until he reached the premiere winners. The Club's coveted award, The Horton Trophy, a perpetual challenge cup for the year's best vacation-film, was won by new-president John Walter, with his Kodachrome film "Shoes." First Prize in the contest went to Foster Sampson's black-and-white film "High Skierra." Second prize went to Louis Reed, absent on duty with the Naval Air Service, for his comedy "Our Hero." Third prize was awarded to Vice-President Art Callow for "Spring Tragedy," a Kodachromed comedy. Fourth prize went to Fred Evans for his satire, "Home Movies." Loren Foote was winner of Fifth Prize with an excellent vacation-film—almost the equal of those which twice before had won him the Horton Trophy—"Back-Packing the Sierras," and sixth prize was given to W. D. Garlock for "The Magic Closet." A considerable number of additional prizes were decided by lot, which was probably the most equitable arrangement in view of the Judges' report of the unusually uniform excellence of the entries, which in some instances had made awards hinge on less than 1/2 of 1% in a film's score.

The meeting concluded with the screening of the seven major prize-winners, accompanied by musical scores.

GERTRUDE MILLAR, Secretary.

## Exchanges for Philly 8-16

The December meeting of the 8-16 Movie Club of Philadelphia was brightened by the showing of two prize-winning 16mm. Kodachrome films, "Puppet Fantasy," by Paul Snyder, and "One Quiet Evening," by C. J. Hewitt, loaned by the Norfolk Amateur Movie Club in exchange for Norfolk showings of "Retribution" and "Bottleneck" from the 8-16 Club's library.

Plans are being laid for a special contest at some near-future meeting. In this, each member will be Director of Photography for a short screen test. The following month the processed films will be shown, and the winning "take" will bring its maker an elaborate trophy.

LOUIS SOBEL.



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# In the Dog House

## A SCENARIO

By ALEXANDER LEITCH

Past President, Los Angeles 8mm. Club

### MAIN TITLE:

#### IN THE DOG HOUSE

Scene 1: Long-shot in living-room. Two mothers, dressed to go out to a bridge-party. Two children: a boy about 6 and a girl about 7, and their dog, listening as mothers tell the colored maid to watch the children.

### TITLE:

"NOW BELLA, DON'T GO TO SLEEP. WATCH THE CHILDREN CAREFULLY!"

Scene 2: Medium close-up between heads of mothers into Bella's face as she nods affirmatively, rolling her eyes from one mother to the other.

Scene 3: Medium long-shot, showing mothers walking toward door, still giving instructions to Bella, who is seen, back to camera, in the foreground. They pass out of the door, which Bella closes after them. Then she turns and picks up a magazine, and walks out of picture.

Scene 4: Two-shot of the children, still in living-room, watching her.

Scene 5: Medium-shot. Bella sits down in a comfortable chair and starts to read.

Scene 6: Medium two-shot of the children as they squat on floor, stealing furtive looks at Bella.

Scene 7: Closeup. Bella reading, begins to nod, catching herself.

Scene 8: Closeup. Children stop playing and turn, watching Bella.

Scene 9: Quick pan to Bella as she falls asleep, dropping magazine to floor.

Scene 10: Long-shot. Children get up and run out of room.

Scene 11: Medium long-shot from kitchen, showing children still running as they enter the kitchen. They stand together and look around.

Scene 12: Two-shot. Children open pan-closet and start pulling out pots and pans.

Scene 13: Closeup. One of them reaches for the cookie box and lifts the lid.

Scene 14: Closeup shot from over heads of the children into cookie box showing it empty.

Scene 15: Closeup of children registering disappointment.

Scene 16: Medium-shot. Children leaving kitchen followed by dog.

Scene 17: Medium-shot. Children and dog entering library. Pan with them to bookcase where they start pulling out books.

Scene 18: Closeup. Shot over shoulders of children showing them turning pages, but no pictures.

Scene 19: Medium-shot. All books out of bookcase and scattered over floor

as children get up and leave.  
Scene 20: Cut to close-up of maid still snoring.

Scene 21: Medium long-shot. Children and dog enter laundry, open washing-machine, and start putting in various clothes, socks, dish-towels, napkins, etc.

Scene 22: Closeup of hand turning on switch, followed, if possible, by quick pan from switch to washing-machine showing it going full speed, and full of clothes.

Scene 23: Closeup of washing-machine, showing children's hands still putting in clothes.

Scene 24: Medium long-shot. Children

turn away from washing machine and start out of door. Fade out.

Scene 25: Medium long-shot. Fade in. Children and dog enter bedroom.

Scene 26: Medium long-shot. Children at clothes-closet, reaching for and pulling out clothes.

Scene 27: Medium-shot. Girl holding mother's dress on her. Pan to boy holding tuxedo to him. He speaks.

### TITLE:

"LET'S GO PLACES."

Scene 28: Medium long-shot. Children getting into clothes. Floor all covered with dresses and suits.

Scene 29: Cut to close-up of maid, still sleeping and snoring.



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Scene 30: Medium-shot. Children all dressed up and going out.  
 Scene 31: Long-shot. Children coming down outside front stairs.  
 Scene 32: Medium-shot as they step on to sidewalk and walk away.  
 Scene 33: Cut to washing-machine still going full blast.  
 Scene 34: Medium close-up of dog entering bedroom.  
 Scene 35: Close shot (pan). Floor of bedroom all covered with clothes.  
 Scene 36: Closeup. Dog playing with clothes and tearing them up. Fade out.  
 Scene 31: Medium close-up. Fade in. Children return to bedroom and see what has happened.  
 Scene 38: Medium-shot of girl with large darning needle threaded with wool, trying to sew the torn dresses. Quick pan to boy doing the same. Fade out.  
 Scene 39: Close-up. Fade in. Maid starting to wake up.  
 Scene 40: Medium long-shot of front door of living room as it opens and the mothers enter, looking at maid and registering shock.  
 Scene 41: Medium-shot. Maid jumps up half asleep and confused.  
 Scene 42: Medium-shot. Mothers continue entering living room door, slamming it behind them as they say:

**TITLE:**

"WHERE ARE THE CHILDREN?"

Scene 43: Closeup of maid shot between the two mothers as she shakes her head negatively and registers fear.  
 Scene 44: Long-shot of the mothers and maid as they move out of the room hurriedly. As soon as they are out of the picture, pan to the floor showing the books all scattered.  
 Scene 45: Closeup of washing-machine still running.

Scene 46: Close-up of mothers looking horrified. if possible, pan to maid blinking her eyes.  
 Scene 47: Medium-shot. All three turn and rush out of the laundry.  
 Scene 48: Long-shot. Children on floor in bedroom, still sewing, and dog lying on some of the dresses.  
 Scene 49: Three-shot of mothers and maid as they enter, and register amazement, as one of them says:

**TITLE:**

"HOLY SUFFERING CATS!"

Scene 50: Close-up. Children on floor look suddenly up at mother.  
 Scene 51: Close-up of dog on floor, looking sheepish.  
 Scene 52: Medium-shot. Mothers grab up children and maid grabs dog and all rush out of the room.  
 Scene 53: Close-up. Mother with boy over lap and using the hairbrush. Pan to other mother doing the same with other child. Fade out.  
 Scene 54: Close-up. Fade in. Dog house with "Fido" printed on it, made with full open front showing only the faces of maid in center, a child on each side, and the dog on top of them all looking pretty sad. They pull down a curtain in front of them on which is lettered.

**TITLE:**

THE END.

Fade out.

**R.C.A.F.**

(Continued from Page 55)

200 hours of instruction: in more tangible terms, it probably lops very nearly a month off the time necessary to turn out each R.C.A.F. pilot, radioman-gunner or bomber-observer. As it is, we can turn out a trained fighter pilot in 22 weeks, a radioman-gunner in 24 weeks,

and a bomber-observer in 27 weeks. If we didn't have the asset of our training films, you could probably add about three weeks of instruction to each of these training-periods! And in some respects, at least, the students probably wouldn't be as thoroughly prepared for action as they are now.

"These advantages are impressive enough when you consider them in terms of speeding up an individual airman's training period, but they become really significant when you consider them in terms of a mass-production affair such as the whole Commonwealth Training Plan. It's no military secret (certainly, it would give no 'comfort' to Jerry or Mr. Jap!) that the plan as a whole is turning out some 900 pilots, 800 gunners and 700 observers *every month*. Without the use of motion pictures in our training, this flow of trained air crews would be materially slowed. We can take it for granted, then, that the motion picture is playing a really valuable part in our job of turning out fighting airmen to gain for our side supremacy of the air." END.

**Army Films**

(Continued from Page 59)

aid of training manuals and the advice of the liaison officer from Engineers, the script is written. It has to be approved by various officials in the War Department in Washington, and then shooting can start.

Very little of the actual shooting takes place at Fort Monmouth. It is easier to send a camera crew to the appropriate location than to bring all necessary equipment and personnel to Monmouth. Usually the service school of the branch concerned will be chosen.

The unit that is sent to take the picture is thus pretty much on its own once it leaves the Laboratory, and must be sure to get every shot it needs while on location. Retakes are generally impossible. The crew is led by the director, most often a commissioned officer, and includes eight enlisted men. There are two cameramen and their assistant, a still-man, a script-clerk, truck driver, power operator, and a utility man. The necessary basic labor is obtained from the local camp.

Each crew is based on a specially equipped truck. TFPL has ten of these standard army trucks fitted out inside with everything needed on a shooting trip. While cases are built so that every piece of equipment is packed safely in its place, all pieces can be removed without difficulty and repacked in any standard truck of that type. This minimizes the loss of time due to breakdowns. When the truck leaves camp for a shooting trip, it is ready to take pictures anywhere, under any conditions, under its own power. The inventory of material included takes up two full pages and includes everything from cameras to carbon paper and cleaning tissues and even cartons to mail back the exposed film.

Most of these films are shot without

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natural sound. A commentary is written for them later and dubbed in at Fort Monmouth. Occasionally, sound is necessary, and the unit is ready to do the recording on location. They have three sound trucks with all necessary equipment, and technicians to handle it. These sound trucks, while smaller than the others, are just as completely self-contained.

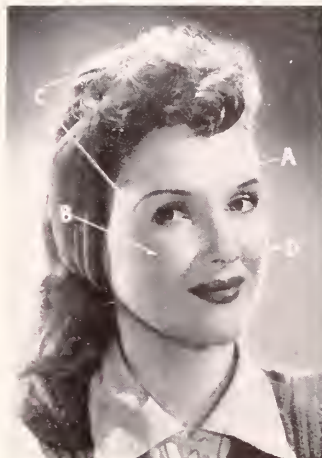
The equipment used by TFPL is as standard as it is possible to get. Using familiar types of equipment enables the professionals who form the larger part of the unit to become assimilated as quickly as possible. Mitchell Standard cameras are used throughout. Their light weight, sturdiness and adaptability make them a favorite. Plux X and Dupont No. 2 are the most commonly used films, although other types may be employed for special jobs. The usual assortment of filters and lenses are part of standard equipment. All work is done on 35mm. film, with the final prints being made in both 35mm. and 16mm. The developing is done either at the Signal Corps laboratory at Fort Humphreys, Washington, D. C., or at New York's DeLuxe Laboratories.

Little footage is taken by the Unit on maneuvers. It has been found that this is not suitable from an educational viewpoint. For best results a film must be planned in advance and taken under controlled conditions. Scenes must often be taken several times in order to properly emphasize the desired points. This is obviously impossible during maneuvers. While motion pictures may be taken of maneuver action for tactical study later, they are not taken by the TFPL, but by regular units of the Signal Corps, assigned for the purpose.

The animation section of the unit absorbs a large percentage of its personnel. Animation is extremely useful in explaining the inner workings of something like a machine-gun or a carburetor. While this is, of course, more expensive than straight photography, and usually takes more time, its value is sufficient to make it a worthwhile expenditure. The TFPL has been able, however, to cut down on the work involved. In the first place, they have found that the subjects they must animate do not need the same number of drawings, nor as closely spaced, as is necessary for a commercially-released cartoon. The mechanics of machinery is apparently simpler than that of human beings or of animals. Another technique that has been developed at Fort Monmouth is the fuller use of articulation. Instead of illustrating the motion of a piston and the valve heads in a cylinder, for example, with a set of a thousand or more drawings, a two dimensional model is constructed out of celluloid. This can be moved through its complete cycle in a fraction of the time needed to draw the complete set.

Most of the men who are working in the unit above clerical rank have been drawn from professional circles, Hollywood and elsewhere. A number of well-

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known cameramen have turned from the newsreels to the Army. Bill Widmayer of "The March of Time," Al Gold of "Fox Movietone," A. L. Gaskell, from the Boston office of "News of the Day," Lee Doran, of "Universal Newsreel," and Daniel Cavelli, formerly Gregg Toland's assistant, are some of the photographers down at Monmouth. Whether they volunteered or entered the Army through Selective Service, they are working where they can use their experience to the best advantage of their country. Such men as Maj. Robert Presnell, from Samuel Goldwyn Studios, writer of "Meet John Doe," Maj. Paul Sloane, producer-director

from Paramount, Capt. Gordon Rigby, a veteran of many Hollywood studios, Capt. Richard Carroll and Capt. David Silverstein of Columbia, Capt. Harrison Jacobs of the "Hopalong Cassidy" series, and Lt. Julian Blaustein, who formerly headed Paramount's story department, are typical of the executive personnel now working on these Army films. Writers, editors, animators, and the rest, have come from Hollywood to join TFPL.

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dium. They've pitched in to learn a new language and a new technique to help make our Army the invincible force so necessary today. Many of them have left secure and comfortable positions, have volunteered to travel 3000 miles from their families and homes, to offer their services and their skill acquired through years of training. They are doing what they know best—making films for Victory! END.

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## Color in the Air

(Continued from Page 61)

tical power-dives, we found—as Marshall and I had learned a number of years ago in making "Hell Divers," the first film about the U. S. Navy's dive bombers—that if the subject-plane and camera-ship simply dive together, there is no effect of diving produced on the screen, because the ship being photographed still appears to be flying horizontally in reference to the camera's frame. To get over the dramatic effect desired, the camera must be tilted over sidewise so that the plane being photographed appears on the screen to be diving downward, toward the bottom of the frame.

To facilitate this with the big Technicolor camera, a special device was developed. We called it the "roundie-roundie," which was probably as descriptive a name as anything. It consisted of a special, barrel-like mounting interposed between the camera and the tilthead. By means of gears, this "barrel" could be revolved approximately along the horizontal axis of the lens. In this way, as the camera-plane entered its dive, the camera could be rotated about 90 degrees in the opposite direction, so that even though camera-plane and subject-plane were diving vertically, the camera's frame remained level, and the plane being photographed appeared quite properly to be diving toward the bottom of the frame. If

necessary, the camera could even be rotated completely, and turned upside down or spun round and round. Working it properly, with a big, topheavy camera in the already topheavy mount, while your own plane was going into its dive, took some rather difficult physical coordination, it must be admitted! This device, too, would have been much easier to operate had it been placed on a geared tilthead rather than a friction-type head.

The bulk of the Technicolor camera somewhat restricts your choice of mounts when making fixed-mount shots. The mounts, as shown in the illustrations, must be of sturdy construction, and solidly anchored to the plane's framework. Due to the factor of wind-resistance, it seems best to have these fixed-mount installations pretty close to the center-line of the plane—under the landing-gear, or directly above the center-section of an open biplane. Fortunately, due to the fine skill Byron Haskin, A.S.C., and his special-effects staff have acquired in making Technicolor process-shots, we did not have to contend with the problem of mounting these big cameras out on the wings or back along the fuselage, as was sometimes necessary in black-and-white a few years ago, before projected-background process technique was so well developed. It is probably just as well! I am sure, anyway, that we aerial cameramen—to say nothing of the pilots who fly us—look forward more sincerely than most to the long-promised coming of the monopack type, single-film Technicolor which can be shot in standard black-and-white cameras!

Making "Captains of the Clouds" was in many ways one of the most interesting of all the many location-trips I have ever taken. For many weeks we were the guests of our very hospitable Northern neighbors, the Canadians, and particularly of the Royal Canadian Air Force. Some of the time we lived in barracks at various R.C.A.F. training centres, and took part in the regular Air Force life. The way everyone from Air Marshal Bishop, the famous World War I ace, down to the humblest air-craftsman took time out from their regular wartime duties to help us is something we shall not soon forget. I am sure every member of the troupe agrees in hoping we've given them a picture of which they may be proud.

Making the "bush flying" sequence which comprises roughly the first half of the picture gave us not only some spectacular flying, but some decidedly ticklish moments. The Canadian "bush flyers" are a peculiarly hardy bunch of airmen—probably lineal descendants of our own "barnstormers" of twenty years ago—who provide the only means of transportation for freight and passengers throughout much of the bush country of the north, where mines of many kinds, trapping, prospecting, and the like are being developed. Flying from lake to lake in float-seaplanes (or in

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Getting these scenes, with a group of picture-trained Hollywood pilots flying seaplanes (some of them for the first time) while we photographed them from a landplane, was quite a thrill in itself. We had plenty of spectacular "chase" action which called for hedge-hopping over the forest's treetops, and skimming close above the surface of the lakes with which Canada is dotted. That was all right for stunt pilots flying solo in float-equipped seaplanes, which could land safely on the lake in case of trouble—but following them in a landplane was another story. There were plenty of times, you may be sure, when each of us were very happy, indeed, that the studio had been kind enough to give us a camera-ship equipped with three husky motors, rather than a single one!

We can hardly pay too much credit, too, to the pilots who, under the direction of Frank Clarke, flew all of this part of the picture. They indulged in a lot of really dangerous flying, doing it, too, in unfamiliar float-seaplanes, yet they came through it as though they'd been flying seaplanes for years.

Later, as we got into that part of the story where the leading characters joined the R.C.A.F., we worked with regular Air Force training and operational squadrons. And we can verify what the Germans, the Italians and now the Japs have learned to their sorrow—that these men of the R.A.F. and the R.C.A.F. are fliers second to none! Many of the boys we photographed as cadets are now officers in active service overseas, and have already distinguished themselves in action.

One of the more spectacular shots of this part of the picture was of a mass take-off of the training-planes of one of Canada's many primary training schools. Several score of the bright yellow "Fleet" trainers taxied down the runway in formation and took off. Our camera-ship, in the air beforehand, dropped down into the middle of them, and filmed the take-off from the same level, making one of the most spectacular scenes you could wish.

Later in the picture, we spent some

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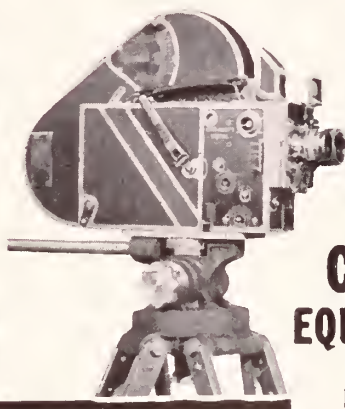
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Right: 35mm Eyemo with motor and 400 ft. magazines mounted on "Professional Jr."

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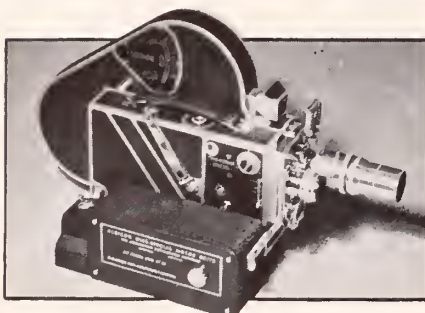


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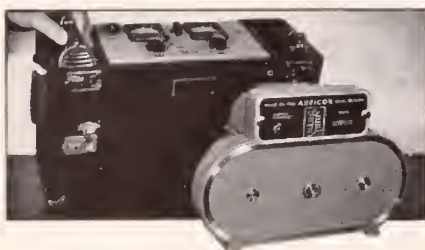
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time with an operational squadron on the Atlantic seacoast, flying Lockheed "Hudsons." One day I recall we were out "somewhere over the Atlantic" flying a Hudson bomber, and photographing a formation of similar ships representing, in the story, a mass flight of bombers being ferried to England. Underneath us was a vast expanse of dull-gray ocean, I turned to one of the officers with us, and asked where we were. He replied very casually, "Oh, we're about 150 miles south of Halifax, and 200 miles out to sea!"

On another such flight, we were getting along famously, when suddenly—right in the middle of a shot—our twin-motored "actors" broke formation and started off in a hurry to various points of the compass. Our pilot followed suit. When I asked him what in the world was happening, he replied, "We just got a radio that such-and-such a steamer's been torpedoed a few miles over—and we've been ordered out to 'get' the sub that did it!" That day, we were out on business—for Canada, not for Hollywood!—from 11 in the morning until nearly 5 in the evening.

In another sequence, we used a "Hurricane" pursuit-plane painted up with appropriate swastikas to represent a German Messerschmitt fighter which was supposed to attack the ferry-flight of bombers. We really sympathize with the poor chap who had to fly that plane. He had a nervous time of it. Every time we went out, they had to phone and broadcast to all the stations for miles around that "There's a 'Hurricane,' painted to represent a German plane in the air. It's an R.C.A.F. ship being used for a Hollywood motion picture. For heaven's sake, don't shoot at it!" With scores of anti-aircraft batteries scattered below us, loaded with 'live' shell and with tense, itchy-fingered gunners, that warning was really necessary! In wartime, you know, when you see an enemy plane, it's considered good form to shoot first, and ask questions later. That incident brought it home to us very forcefully that we were, after all, not just photographing a play war, but were filming a story built around the real thing, and shooting it in a country already seriously engaged in real war! END.

## Vic Milner

(Continued from Page 63)

matographers was founded in 1919, he, as a recognized First Cinematographer, was one of the fifteen Charter Members.

During his climb, he did what few, if any other members of the profession has had the courage to do. Arrived at a high place in his profession, he admitted he still had more to learn—and voluntarily dropped back to an assistant's menial job for the sole purpose of gaining further experience by working with the man who was then acknowledged to be the industry's greatest master of lighting—John F. Seitz, A.S.C.

It was after this "post-graduate course

in cinematography" that he felt himself qualified to make his daring proposal to Director Niblo. No wonder he felt confident of making good! And no wonder, either, that from that day to this, he has stood always among the foremost members of the camera profession! Many of Hollywood's greatest and most perfectly-photographed pictures have come from his cameras. During the years when Ernst Lubitsch was the kingpin of the Paramount roster of directors, and making history with the delightful Chevalier-McDonald musicals, Vic Milner photographed them. Today, when Cecil B. De Mille makes a picture like "Reap the Wild Wind," he insists on having Milner at the camera. One of the Milner-De Mille efforts—"Cleopatra"—won the coveted Academy Award for the year's best photography; virtually all the other have been Award nominees and near-winners in both the black-and-white and color groups.

Milner's approach to his work is unique. He throws himself into each picture with the same nervous intensity you see in Toscanini's conducting of a great symphony concert. When he is on a picture, he has time for very little but his work; he eats, and sleeps and dreams and lives with his on-the-set problems and aspirations. For to him, an assignment to photograph a picture is vastly more than a mere job: it is a solemn trust.

That trust, as Milner sees it, is twofold. "On the one hand," he points out, "the producer has entrusted me with the responsibility of getting his investment of perhaps two or three million dollars onto the screen in saleable celluloid. On the other hand, the public who, collectively will invest as much or more money in buying their way into the theatres to see that picture have, by implication, at least, entrusted to me the responsibility of bringing to them in the most perfect form possible the entertainment which producer, writers, director and players have created for them on the set. Either way you look at it, if I fail in my work of putting the picture on film in the best way possible, I am failing those trusts.

"The same thing applies to the way I photograph any given star. The producer has spent a lot of money building up a star like, say, Claudette Colbert. The public, whose support has made her a success, has an equally big investment in the way she looks on the screen. I've got to use my knowledge of photography, lenses and lighting to protect both of those investments, and see to it that she appears at her best in every scene."

With an attitude like this, it is no wonder that Milner is his own severest critic. Repeatedly I've seen him come from rush-print screenings looking the picture of dejection. To his friends, he'd disgustedly assert that he'd lost his grip—that somehow he couldn't balance his lighting at all—that his exposure and compositions were all wrong—that his assistant could have done a



better job than he did. Yet at the same time, everyone in the studio—executives, players and fellow-cinematographers—would be singing his praises for the superb skill he had shown in difficult work! Seldom, if ever, have I seen him completely satisfied with even his best work, or willing to admit he couldn't have done it a bit better.

He seems equally at home in any key of lighting or visual mood. He has achieved brilliant success with sombre, low-key dramas like the original "Way of All Flesh" or "The Man I Killed;" yet at the other end of the scale, his skill in sparkling, high-key lightings for smart comedy-dramas like the Lubitsch musicals or the more recent "Lady Eve" and "My Life With Caroline" is acknowledged as perhaps the industry's foremost.

If you press him, he'll admit that, in black-and-white, at least, his preference is for the sparkling high-key work in which he so greatly excels. But his real preference is for color. His first three-color Technicolor effort, "North West Mounted Police," was a stout contender for last year's Academy color Award; his recently-finished "Reap the Wild Wind" is said to be one of this year's most sensational Technicolor releases. He is anxious for further Technicolor assignments, for to him, color is the coming medium.

"Each time I've finished a color picture," he points out, "and gone onto a black-and-white production, I had a scene of futility as I viewed the rushes. No matter how hard I tried, my work in black-and-white left me with an instinctive feeling something was missing. There was—both the added reality of color, and the fuller artistic scope color affords the cinematographer.

"Isn't it logical to believe that the public feels the same way, too, if perhaps only subconsciously—especially since any of them can put a roll of Kodachrome into his home-movie camera and make his own pictures in color? Certainly, after seeing a star like Madeleine Carroll or Paulette Goddard in color, there's a let-down in seeing her in black-and-white—a feeling some vibrant dimension is missing.

"I'm sure it's only a matter of logical progression until all our major pictures will have to be made in color. Maybe not Technicolor, but in some three-color process equally good or better.

"From the cinematographer's viewpoint, color is certainly the next step. Fourteen or fifteen years ago, just before sound came in, we were fast approaching the peak of perfection in black-and-white camerawork. Our better pictures reached incredible heights in their perfection of mood, roundness and tonal values. Then came sound, and the advent of panchromatic film, which gave us new problems to overcome, new conditions to master.

"Since that time, we've done it. Today, we're fast approaching, if we haven't actually reached, a virtual saturation-point in our artistic and tech-

nical progress in black-and-white camerawork. We've got to keep on progressing in some direction, for we certainly can't stand still.

"Color, I think, is the avenue for that next progression. Most of the men who have had experience photographing modern color productions will, I am sure, agree with me. It gives us a new medium—a new means of expressing ourselves both dramatically and pictorially—a new and vital realism.

"I think the men who have so far made color productions will agree, too, that there has been a good deal too much of a mystery made of color-photography. My own experience—and that of most of the others—indicates that color is, if anything, even easier than black-and-white. But it calls for painstaking technique, and a genuine understanding of photographic fundamentals—lighting, exposure and composition. Above all, it calls for inherent good taste.

"Most of this talk about a special 'color sense' is just publicity. Of course there are some few people who don't seem to show any sense at all about color-combinations, like your neighbor who insists on wearing a purple tie with a green shirt: but I think good taste covers it much better than any term like 'color sense.' And as we make more and more color films, I'm confident we'll see it proven that any capable cinematographer who has ordinary good taste is potentially an equally good color cinematographer. After all, good photography is essentially a matter of knowing the fundamentals—lighting, composition and exposure. And those fundamentals apply with equal force to all kinds of photographic picture-making, whether you're making your picture in movies or stills, on orthochromatic or pan film—or in black-and-white or in color.

"Details may change with the times and the media available: fundamentals never will. Run any outstanding picture of fifteen or twenty years ago today, and if your eye can penetrate beneath the surface differences caused by improvements in materials and equipment, you must honestly admit that scenes which were fundamentally good photography then, are still good photography today, though today we could do it better because we've better materials with which to work.

"Tomorrow, we'll have yet better materials—one of which, I'm sure, will be increased use of color. But none the less, the basic factors of light-balancing, exposure and composition, which make a picture good or bad today, will still be the governing factor twenty years from now. And the men who know those fundamentals needn't fear any of the superficial changes that are bound to come!"

That, we'd say, looks like a pretty good summary of the reasons why Victor Milner, who learned his photographic fundamentals the hard way, is one of the leaders of his profession. END.



"March of the Penguins": 1/50 at F/11, ortho film, K-2 filter

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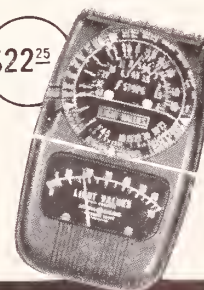
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## Protect Your Film!

(Continued from Page 70)

and water spots, and by finger-marks.

Luckily there are several methods by which film can be protected. It's quite a job, though, because to do a really good job, the protective treatment should safeguard it against such widely differing dangers as damage from climate, wear, scratches, oil, dirt, water and finger-marks. Adequate resistance to the heat of projection and lack of satisfactory atmospheric moisture requires maintenance of what the chemists call the "pliability reserve." Resistance to such physical damage as scratches, excess atmospheric dampness, and oil, water

and fingerprint stains requires a toughening or hardening of the emulsion's structure. Yet this last must be obtained without sacrifice of pliability—and both changes must be permanent, and unaffected by either continued use or the repeated cleaning which all good film should be given.

One very recent method is the one introduced a year or so ago by the Eastman engineers, which consists of applying a microscopically thin coating of a special lacquer over the film's surface. This would appear to seal the emulsion in what the diplomats like to call the "status quo," and should tend to keep the moisture in the emulsion from getting out, or that which is outside from getting in. It also seems to act like a coat of armor-plating: the lacquer-coating is thick enough to take the oil-marks and fingerprints and all but the deepest scratches without letting them penetrate to the emulsion. Then, when the film begins to show wear, I understand the lacquer can be removed, and a new coating applied, so that the net result is virtually a new print. However, there's one practical question I haven't yet seen answered in any discussion of this method: whether or not it also seals the edges of the emulsion-layer. This is important, for moisture can work in and out edge-wise, as well as through the surface of the emulsion; there are some operations in Kodachrome processing, I believe, in which certain layers of emulsion are developed or colored just that way—by penetration through the edges.

Another very popular, and technically unique method of protecting film is by the well-known Vaporate process. In this, various chemicals, each of which serves a particular function in protecting the film, are introduced in proper sequence, while the film is kept in a vacuum.

In this process, the first step is to introduce a chemical which displaces the easily-lost water content of the gelatin particles, and substitutes an inner lubrication which gives the necessary

inner resiliency. This protects the emulsion against heat and brittleness.

The next operation introduces chemicals which toughen the surface of the gelatin particles to seal in this inner lubrication, and to seal out unwanted water, oil, dirt and finger-marks. It also tends to provide protection against scratches and abrasions, against water damage in accidents, floods and fires, and against mildew and other bacteriological deterioration.

The next step after this is the introduction of further chemicals which lubricate the outer surfaces of the gelatin particles, *after* that surface has been sealed to keep the inner lubrication where it is needed, and toughened to resist wear and abrasion. This outer lubrication is quite distinct from the inner lubrication. It eases the passage of the film through the projector, and lessens the mechanical strain on the perforations.

All of this treatment would be of relatively little use if there were not some method of keeping the various protective chemicals where they belong. In this direction, the Vaporate treatment is, I think, particularly ingenious. The various protective chemicals are introduced in a vacuum. They actually enter the treating-chamber as liquids, but with the release of pressure, they turn to gas or vapor, and can penetrate the emulsion freely. The same basic principle is used to keep them where they belong. Air pressure is introduced after the treating is complete—the normal 14 lbs. per square inch which surrounds all of us normally. And this normal air-pressure serves as a policeman to keep the preservative chemicals in the emulsion, and to keep cleaning-fluid, water, and normal atmospheric moisture from seeping in and destroying their effectiveness.

In all of this, however, we've considered only one side of the film—the emulsion. Ordinarily, we think of the emulsion as being the tenderest side of the film. But a number of engineers like Hartley Harrison, who studied the question rather thoroughly when he designed the well-known Craig 16mm. viewer, point out that the celluloid base of the film is much more subject to abrasion than most of us give it credit for. You can check up on this easily enough by inspecting both sides of a strip of abraded film through a magnifying-glass. You'll be surprised how many of the scratches appear to be on the celluloid side of the film!

Probably the best protection from film-base scratches is to have the film lacquered on that side. This should protect the base from most scratches, and the coating can be removed and replaced whenever the film begins to show wear. With Vaporate or a similar coating on the emulsion-side, and a good lacquer-coating on the film-base side, your film should be amply protected against most normal wear and tear.

This sort of treatment is certainly indicated for all fresh film, or film of any

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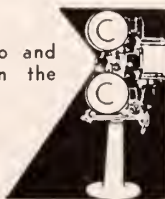
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tainly advise you to look very seriously into the possibilities of giving them protective treatment. No matter what method, or combination of methods you decide to use, the cost is remarkably small—especially when compared to the advantage of having films you can run and re-run without fear that your normal and necessary handling will wear them out before their time! **END.**

## Funny—Or Corny?

(Continued from Page 71)

were in a swell mood, carried right along with the feeling of the story, when along came a couple of meant-to-be comic cops, to solve the case. The first thing they did when arriving at the scene of the crime was to trip over the threshold and fall flat on their faces. Bang—went that beautifully built-up mood of mystery which had been so painstakingly established, sacrificed, shot to the winds by a misguided attempt to get a laugh. So-called "comedy relief"! Darn it, those cops didn't have to fall on their faces just to prove they were supposed to be comedy characters. Their looks, or if not that, something they could do in the normal course of action would cinch their stupidity in a moment. And we don't mean that one of them would have to suddenly pull out a pair of scissors and some paper and start cutting out paper dolls, either!

Among the old stand-bys that are generally good for a laugh is the "double-take," along with its blood-brother, the "late-take." In fact, these have been used so much in so many varied conditions that it's almost a foregone conclusion that a chuckle is imminent if a character indulges in one or the other.

In a double-take, a character hears, or sees something incongruous during the normal course of action. The significance of what he's seen or heard doesn't dawn on him at the moment, and he pays no attention to it, but a split second later the realization hits his brain, and he reacts to it with a take.

The late-take is carried to more of an extreme than the double-take. In this, a character again sees or hears something out of the ordinary, of particular significance. He pays no attention to it at the time, but continues on with whatever he was doing. Several seconds might elapse before wham! it dawns on him.

Little things like "Character touches" can also liven up your scenes. These are not gags, as they are usually some

unconscious, natural bit of business indulged in by a certain character during the normal course of a scene, generally as a result of his particular type of personality. Maybe it's only as simple a thing as the character scratching his nose, or some other simple action characteristic of his personality and not interfering with the main action of the scene. Wally Beery, for example, has stolen many a scene by simply yawning. A "touch" is just that—no drawn-out gag, no piece of business that requires the least build-up.

Double-takes, late-takes and touches are the seasoning that can spice up a picture, but, like all seasoning, they should be used with a fair amount of discretion. It was a great temptation to have one of our characters in "Grizzly Gulch," a dumb detective, indulge in late double-takes all through the picture just because he was that type of character. However, with a great show of restraint, we confined our use of them to where they would do the most good in advancing his personality.

In figuring out continuity business, a good thing to remember is that it isn't always *what* a character does that is funny, but *how* he does it. For example, a situation involving mama mixing cake-batter might be mildly funny, but get the old man out there in the kitchen mixing the same batter, and you'd have something to provoke real mirth. Assuming, of course, that our papa is the average pop—he doesn't know beans about mixing cake-batter.

This is a comedy situation, too, that could be handled in a dozen different ways, employing the broadest slapstick gags and the subtlest character touches. And here slapstick gags would be twice as funny because they would originate logically from the efforts of a definite personality to adjust himself to an unfamiliar situation, and wouldn't have to stand alone on their own merits for humor.

But then again you can't always tell. We had a slapstick gag in our picture that appeared to be entirely in line and evolving logically from the action taking place. A character, slightly tipsy, opened a bottle of potent jitter-juice, which spouted out unexpectedly from the mouth of the bottle in a stream that shot halfway across the room, catching a pal of his, also slightly tipsy, right in the face. We figured that the broadness of the gag would be excused because of the somewhat goofy situation of a couple of drunk comics indulging in a mild spree.

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However, after a couple of trial runnings, it looked corny—had a kind of “Look folks, here’s a guy getting a stream of likker right in the face. Isn’t it funny?” feeling to it. To get around this stigma of corn, we decided to use a complete action of the guy opening the bottle, with the juice squirting out, only instead of showing the stuff hitting the other guy, we held on the shot showing the fellow with the bottle just waiting with a kind of dumb nonchalance until the stream subsided, as if it were a perfectly natural occurrence. He then poured a drink and handed it to his pal, who, as we cut to him, was just in the act of wiping himself off. As a result, there was a good laugh on the scene of the stuff squirting out with the guy just watching it, and another laugh when we cut to his pal.

The proper build-up to a laugh is important. A funny scene can be doubly humorous, depending on the buildup of events which climax in that particular scene. Again an example is pulled from “Grizzly Gulch.” There was a long-shot of a western street, at dusk. Far down at the other end of the street, which was more or less deserted, came a man on foot, walking very slowly, leading a horse.

The scene by itself wasn’t funny. It might well have had tremendously dramatic implications. But it got a laugh. It was supposed to, luckily. A couple of sequences previous, we had shown the same character walking wearily down a hot country road, heading toward town. Having had enough of walking, he rented a horse from a farmer for the purpose of making his trip into town a little easier. We left him galloping off down the road, and the next we saw of him was this picture of the poor dope on foot again, leading his horse into town.

Just because a character is supposed to be a comic is no reason that he should necessarily look like one. It’s far cleverer if his personality can be brought out in the way he does things and reacts to situations. Mere looks alone can be very deceiving. We went a trifle off the beam in one case, in costuming our villain. He was a cheap, tin-horn crook, card-shark and bandit with no comic aspects at all, a straight character to provide contrast to the zany sheriff and detective he worked against. We gave him a derby hat, torn coat, worn-out white gloves and glasses to put over his seedy personality.

Well, the first shot of the guy evoked a laugh on account of the costume, and it shouldn’t have. The audience was started off with the wrong conception of the guy, and were all set from then on to expect something very funny out of him. Which was entirely against our intention, and it took a little while before the audience finally accepted the fellow for what he was supposed to be. And the fact that he was killed off in the last reel cinched the seriousness of his character for us.

However, it isn’t any more necessary to kill off a character to prove he’s not a comic than it is to have a comic indulge in zany horseplay all through the picture just to prove that he’s what he is.

As long as the movie-maker knows pretty well what result he wants to achieve on the screen, before he starts rolling his camera, he is reasonably assured of a satisfactory result. Decide on a thing, then stick to it.

But to bear out the contention that there are no rules for making pictures is the classic story of an early silent film producer who shot his wad on a super-dramatic costume epic. After the thing was all cut together, it was run off in the projection-room. After the last reel rolled off, there was no sound from anyone—producer, writer or director. Just a stunned silence. The super-dramatic epic was an unbelievable collection of corn. The acting was awful—everything in the whole darn picture was hopelessly corny from a dramatic standpoint.

Well, the masterminds went into a desperate huddle. Obviously, the picture was beyond repair. No amount of retakes could patch it up. In fact, there wasn’t any money left. Suddenly inspiration hit. A writer who specialized in gag titles was frantically yanked in, and the whole picture was turned over to him. He went to work and cut in gag titles at different spots throughout the picture. The result was that the intended dramatic epic metamorphosed into a hilarious burlesque which was a smash hit!

If you don’t believe this, try shooting a serious drama, then cut in some choice gag titles at the proper places. However, it is hoped that the average cineham will know before he starts whether or not his picture is to be a funny one, and won’t have to resort to gag titles

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to carry it into the realm of the burlesque.

Then, even when it's finally all over, the cine-ham can't be quite sure if his result is funny or corny. He's been too close to it for a first-hand, detached appraisal. And he usually finds that even his best friends won't tell him. **END.**

## Telephotos

(Continued from Page 72)

possibly cover. Unless the lens is an uncommonly good one, you're likely (especially if it is a fast lens used at or near full aperture) to notice a slight falling off in definition at the edges, and particularly the corners of the picture. But if you use the same lens on a much smaller-sized film—as in this case, 16mm. instead of 35mm.—you can easily see that you're only using the center of the lens' actual image. This is the best part—the “cream of the crop,” so to speak. If you've done a good job of mounting, and of course if your focus and exposure are correct, this image will be sharp to the very edges—even if the lens is used wide open—and it will stand considerable blowing up, even the tremendous enlargement of projecting on a theatre-size screen. Only the grain-size of the film will limit you, and with Kodachrome, even this is almost eliminated.

Perhaps the sketches will give you an idea of the principle of this, and also of why a longer-focus lens used on a picture-size smaller than the lens is intended to cover will give a telephoto effect. Suppose you take a picture with an average-sized still-camera, and make a lantern-slide positive from it. In projecting this, you see an image of a bird sitting on a telephone-wire in the background. Now mask the slide down until the image of the bird is all that remains of the original picture—instead of a 3¼x4-inch slide, you will have an image about the size of a 16mm. frame. Back the slide-projector away from the screen until this part of the image completely fills the screen, and you'll have obtained what is virtually a full-screen, telephoto shot of the bird. At the same time, you'll be using only the very center of the whole image—the very best part for definition and optical corrections. Using the longer-focus lens on the smaller frame of 16mm. is giving you precisely the same effect, with less trouble.

Getting back to practical things again, don't forget that mounting a lens is only half of the job. To use it accurately, you must have an accurate finder to match the lens' field of view.

The simplest method is to make a series of masks of metal or heavy, colored celluloid, which can be fitted over or into your regular finder, and which will indicate the field your lens covers. To do this, set your camera up on a tripod, outdoors, and put a strip of ground celluloid into the aperture. Train the camera on a view, or maybe the side of a building some distance away—anything which has pretty clearly-discernible features. Check the limits

—top, bottom and both sides—of this image with a magnifying glass, and—without moving the camera—mark these same points on your finder-matte. Then cut out the matte.

If you're likely to do much close work with your telephoto, it is a good idea to repeat this operation for some closer distance, like 6 feet, so your finder-mask will not only show the distant field for the lens, but will also give you an indication of how much to allow for parallax at closer distances. **END.**

## Camera Widow

(Continued from Page 73)

the title-cards. Often their wives—especially if they've any knack for literary expression—can do a much better job of title-writing. And if you've any leaning toward sketching, lettering and the like, Hubby is likely to thank you with extra enthusiasm if you'll turn it to helping him letter his title-cards. Don't forget, either, that often an amusing little cartoon on a title-card can help give home movies an extra sparkle.

One of the smoothest-working husband-and-wife moviemaking teams I know is that composed of Bob and Bessie Teorey, of the Los Angeles 8mm. Club. As a First Sergeant of Marines aboard a Navy cruiser, Bob and his 8mm. camera travelled all over the world—to China and the Philippines, to Panama, South America, and Hawaii. A crackerjack photographer, he brought home reel after reel of really outstanding travel scenes. Then Bessie, after previewing the rushes, would plan out a continuity which—with the inclusion of a few added scenes—would provide a simple little story framework upon which the travel scenes could be hung. Bob would do the necessary shooting, and editing, and the result was a series of prize-winning pictures.

On another occasion, Bessie planned a simple little scenario-film which could be filmed with a cast of friends. As Bob could get only week-end leave ashore, his wife made all the necessary preliminary arrangements. When he came ashore one Saturday, everything was ready for filming—camera, film, lights, cast, props, make-up, and every-

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thing else—and in two afternoons' work, the picture was shot. The next week-end, the rushes had been processed, and Bob and Bessie did the necessary editing and title-making. The third week-end, the film had its very successful premiere—and it's been successful in competitions and general showing ever since.

LaNelle and Ray Fosholdt of the Long Beach Cinema Club form another outstanding team. LaNelle, too, turned her energies to script-writing for Hubby's camera, and did it so capably that she's become the mainstay of the Club's scenario committee.

Yet another couple of my acquaintance has found another way of teaming up two very divergent interests to add to the family's movie-making pleasure. Hubby is an all-around good movie-maker—so good in all departments you wouldn't think his wife could find any phase where her help could be really worthwhile. But she did. Grace, you see, is an extremely capable musician, and a composer of no mean ability. So she waits patiently until her better half's productions are all shot, edited and titled. Then she steps in and arranges a suitable musical score to provide an accompaniment for the film's showings. When necessary, she even composes special themes to make her scores perfectly fit the picture. Then she takes her place at the family piano and plays the score, while her husband records it on disc as a permanent, synchronized accompaniment which adds the last touch of all-but-professional perfection to the family films.

Of course, the ideal arrangement for a family filming partnership is one like that of Ellen and Mervyn Gill, both of whom are active members of the Los Angeles 8mm. Club. Theirs is a two-camera family: both Mr. and Mrs. own cameras, and use them with so nearly equal skill that not even an expert can tell where Mervyn's scenes leave off and Ellen's begin except by the fact that Mervyn could hardly have photographed some of the scenes in which he personally appears on the screen. And with two clever cinefilmmers collaborating capably on story-ideas, shooting and editing, they put on the screen pictures which prove conclusively just how much better a real picture partnership is than the usual combination of a cinefilming husband and a disinterested (and over-looked) "camera-widow!" **END.**

## Showcase

(Continued from Page 75)

leaks are prevented by a black silicate coating that covers the bulb up to the extreme lighting end which is a deep blue. The new bulb consumes 25 watts and will list at 45c.

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The American League of Professional Baseball Clubs announces that its four-reel sound-on-film movie "The Ninth Inning," dedicated to the memory of

Lou Gehrig, with a cast including virtually every great name in baseball from Ty Cobb, Tris Speaker, Babe Ruth and Lou Gehrig to Joe DiMaggio and other standout stars of the 1941 American League season is available in both 35mm. and 16mm. versions for free showings to clubs, schools, and the like. A strict requirement that no admission charge be allowed in connection with any showing of this film is made. The only cost to the borrowing organization is that the borrower pay the express shipping-charges to and from Chicago.

Highlights of the film include batting shots of DiMaggio, Williams, Travis, Heath, McCosky and Siebert in slow-motion; hitting, pitching and fielding by the star American League players, in both normal and slow-motion; special shots made at Great Lakes Naval Training Station, Illinois; complete sequence of "decision plays" for the audience to decide; Thornton Lee and Lefty Grove on fundamentals of pitching; fundamentals (slow-motion) on first-base play and bunting; and highlights of the 1941 season, including the World Series. An abbreviated two-reel version is also available. Requests for bookings should be addressed to Lew Fonseca, Director of Promotion, American League of Professional Baseball Clubs, Room 2420, 310 So. Michigan Bldg., Chicago.

## Photography of the Month

(Continued from Page 67)

a blackout without being so completely realistic as to hide his actors, sets and everything else in one screen-filling shadow, has been accomplished with amazing skill. So, too, has his use of blackout effect-scenes photographed actually at night, and the way he has matched these with other, closely-intercut scenes of a similar nature which were photographed actually by day, with filters. Under these circumstances, his treatment of the players—especially Martha O'Driscoll and Eva Gabor—is uncommonly fine.

A discerning eye will probably see plenty of shots culled from "I Wanted Wings," the possible re-utilization of which undoubtedly gave "Pacific Blackout" birth. But the whole job is done well—and entertainingly.

## SMPE Convention in Hollywood

Dr. John G. Frayne, Chairman of the Pacific Coast Section of the S.M.P.E., has announced that regardless of current unsettled conditions the officers and members, after having given the matter serious consideration, have decided to proceed with the completion of detailed plans for the Spring convention of the Society to be held in Hollywood from May 4th to 8th, inclusive.

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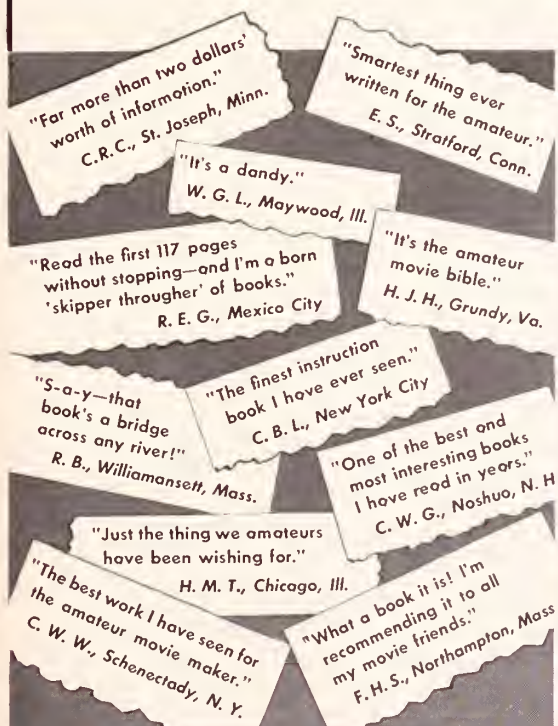
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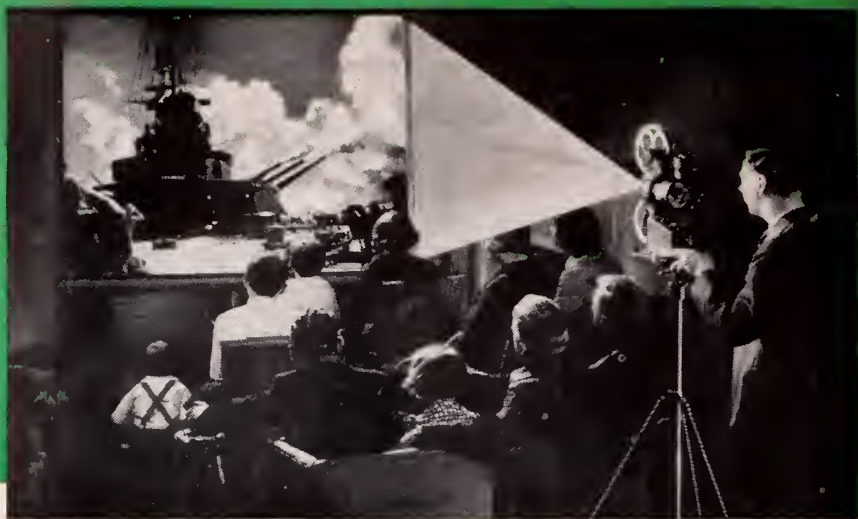
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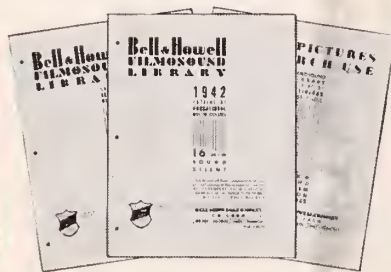


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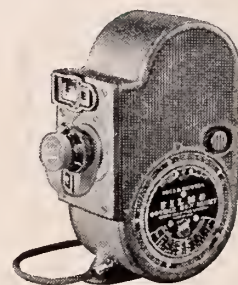
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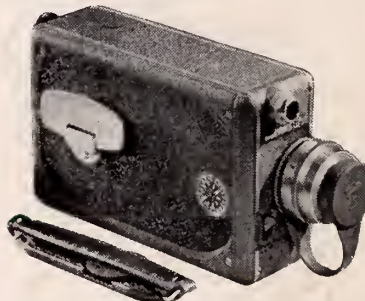
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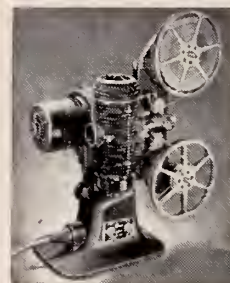
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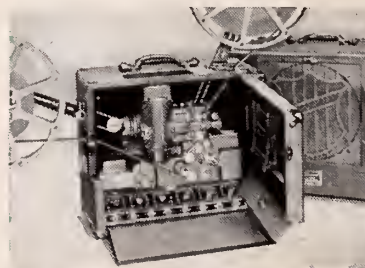
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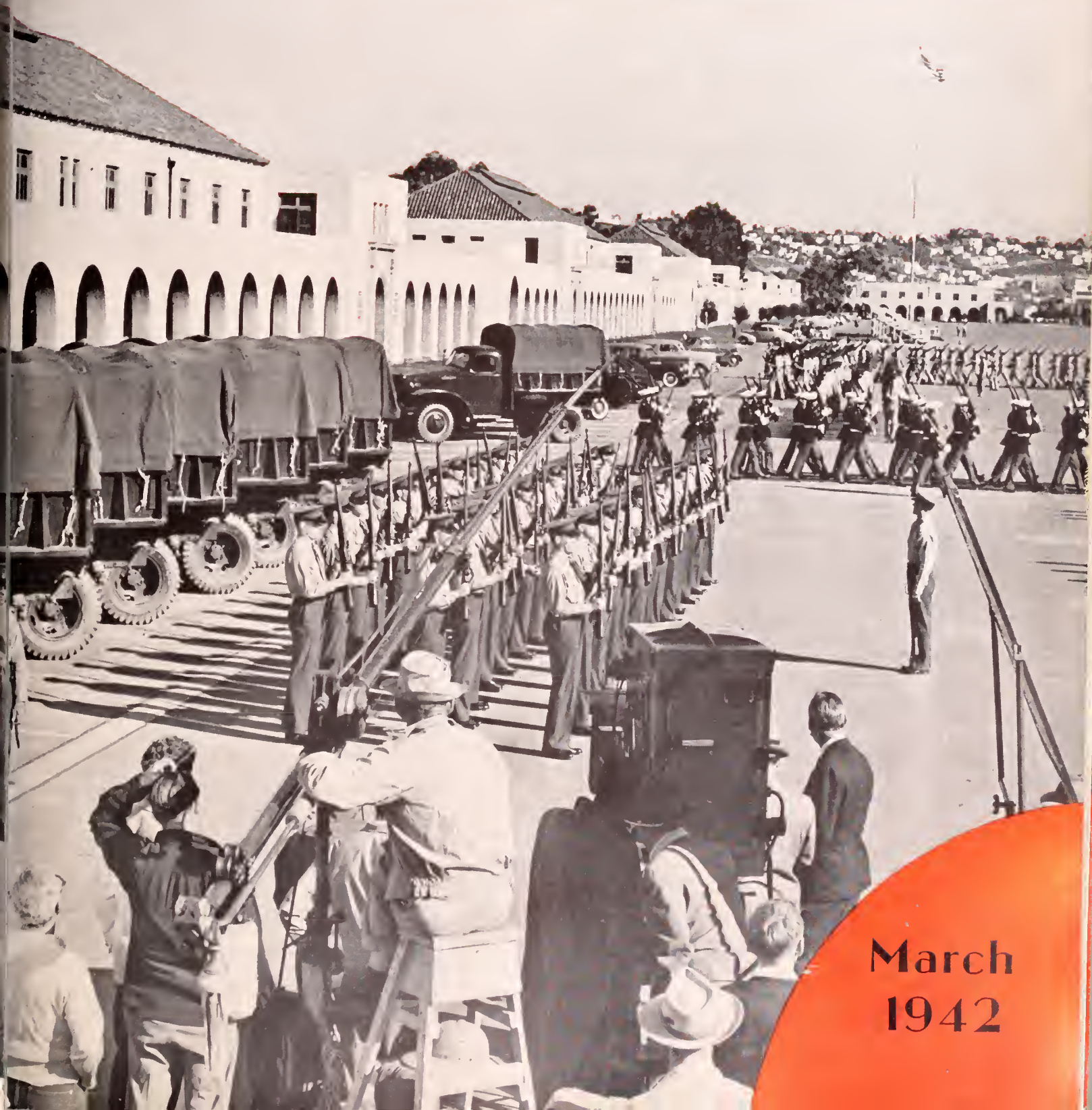
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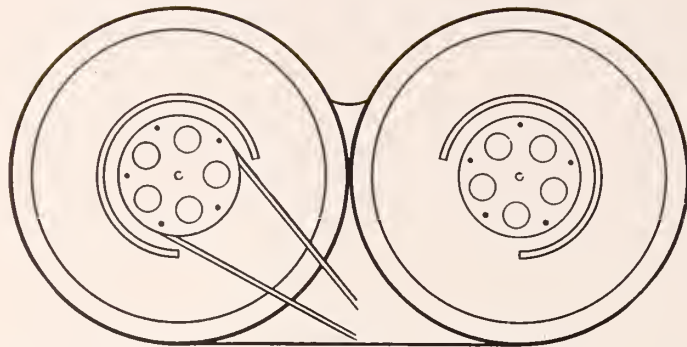
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★ THE MOTION PICTURE CAMERA MAGAZINE ★

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March  
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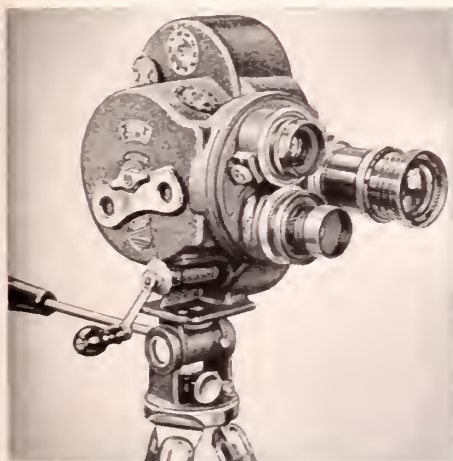


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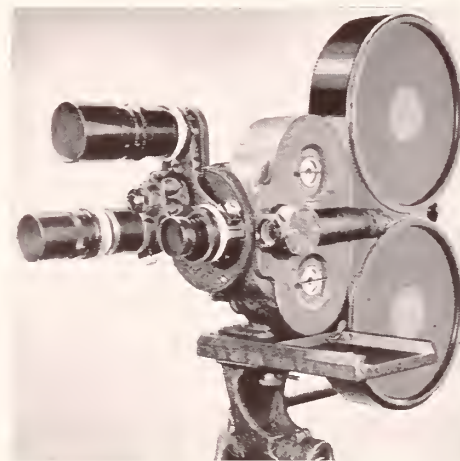


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# AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 23

MARCH, 1942

NO. 3

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## The Front Cover

This month's cover shows Edward Cronjager, A.S.C., Technicoloring a scene for Twentieth Century-Fox's story of the U. S. Marine Corps—"To the Shores of Tripoli"—at the San Diego Marine Corps Base. Photo by Milton Gold.



# DOCUMENTARY FILMS IN WARTIME

By JOHN GRIERSON

Film Commissioner of the  
Canadian National Film Board

LONG ago the documentary film set itself the not very popular task of talking about facts when people were more interested in illusions; of describing social problems which were embarrassing to some and ugly to many; of keeping men's consciences just a little closer to the dreadful grindstone of actuality.

At this time we are all, in one way or another, concerned in the high duty of creating and maintaining the morale which is necessary for a hard and absolute war. We are concerned with that most vital of all defenses in depth: the strong spirit of the people and their will to order and sacrifice. In that work it is not a question of which is lesser or greater: to lighten men's hearts with comedy or to hold them to the sticking point with films of more serious content. Both are necessary. I was reminded of this the other day by a story which came over from Mr. Brendon Bracken, the Minister of Information in England. It seems that when the Soviet War Delegation visited London, they asked Mr. Bracken if they might see a film; and Mr. Bracken said he would be very pleased, and he had some very nice documentaries to show them. The Soviet spokesman said: "Thank you very much—and he was sure the documentaries were very nice indeed, but, if Mr. Bracken didn't mind, the one film on earth his warriors wanted to see was Mr. Chaplin's "Dictator." So they sat down and without understanding a word, laughed all the way through THREE non-stop showings of Mr. Chaplin's "Dictator."

Today's war tasks take us away from our peace-time concern with sociological problems. They are more immediate and more urgent. We are concerned with reporting the battle fronts. We have the duty of keeping the people in touch with their men on distant battlefields, on the high seas and in the air. Because authenticity has always been our watchword, we cannot avoid its more

dangerous implications now. Already some of us know the responsibility of sending our camera-crews into danger and losing our people; and among the warring nations scores of cameramen have already died in the line of duty. In that record of bravery Germans, the Russians and the Australians have been particularly honorable. Wherever, in all the elements, there has been front-line fighting, their cameras have been up.

We have the more difficult duty—the most difficult of all from a mental point of view—of shaping from our war observations on every front—both military and civilian—the strategic pattern of highly complex events: of helping the people to a broad and simple understanding of what is happening,—of where they fit in,—of what in duty is expected of them. Nothing is so certain as that men cannot give their best if they are bewildered, and particularly so in a democracy; and the greatest, perhaps, of all our film responsibilities is to give people, in simple dramatic patterns of thought and feeling, a sense of the true issues which lie behind the maze of events in this difficult moment of human history. Feeling themselves in tune—perhaps inspired—they will the more intensively give of their utmost; and so will we.

In this field the best work today is being done, I think, by Louis de Rochemont and Stuart Legg.

It would be a poor business, however, if in following the hard and objective patterns of historic events, we forget the simple pattern of human reaction which persists in death and disaster, like seed in the scorched earth. None has kept the humanist record more nobly than Joris Ivens, Herbert Kline and Rey Scott in their war-time descriptions of Spain and Poland and China; and the English School is doing it brilliantly in films like "London Can Take It," "Ordinary People," "Letters from Home" and "Target for Tonight." The cry of humanity is not, perhaps, the most potent motif in propaganda, nor the most useful,

when the new forms of war are calling us to hard and inexorable disciplines of all kinds. But we would be denying our democratic birthright if we ever became so hard that we could not hear it.

Lastly, there is a duty which falls on all of this industry alike. It is humble; it is deeply ordinary; it carries no honors with it. Theatres will not applaud it; like private soldiering, it will go completely unnoticed. But it is none-the-less vital. That is the simple duty of helping the country with its every-day chores of war publicity and instruction. We can use the film to help the fighting services in their daily instruction; we can help the thousand and one Civilian Defense Services to a better understanding of their sometimes quite local duties; we can aid industrial morale and speed the organization of new skills in the service of our country. Mr. Disney has already given his great talent to such routine affairs as the teaching of gunnery and the encouragement of war savings; and nothing has honored Hollywood more than the willingness of men like Mr. Zanuck, Mr. Ford and Mr. Capra to step down from the grandiose preoccupations of major production to perform these simple but necessary jobs.

There will be much more of this to do in the future. There is a contribution which every kind of film and every kind of technician can make to help everyone—on military and civilian front alike—to do his job just a little bit better, and feel, however obscure he may be, a fighting force in the national effort. I hope you will not take it amiss if I say to an industry that has so often sought only the exciting, the meretricious and the spectacular, that this sober and humble and unselfish duty of helping the people, wherever they may be organized, to effective citizenship and good soldiering, will be the best evidence that we have, in all reality, aligned our art with the public purpose and have dedicated it, in all realism, to the pressing needs of our United cause.

Excerpts from an address at the Fourteenth Annual Academy Awards Banquet.





CHAMPIONS!  
Arthur Miller,  
A. S. C. (right),  
admires Academy  
Award statuette for  
year's best black-  
and-white cinema-  
tography which he  
has just received  
from last year's  
winner, George  
Barnes, A. S. C.  
Photo by Pat Clark.

## MILLER, PALMER and RENNAHAN WIN ACADEMY AWARDS FOR 1941

FOR the first time in the history of the Academy Awards, *both* of the two major awards for photography—for achievement in black-and-white and for achievement in color—were won by cinematographers from the same studio. For the first time in Academy Award history, a cinematographer who had previously won an Award was privileged to step forward to receive a second "Oscar." And for the first time in Academy Award history, Academy recognition was extended to a 16mm. production.

Such, from the phototechnical viewpoint, was the story of the Fourteenth Annual Academy Awards. The golden statuette symbolizing the tribute of the motion picture industry to the man responsible for the greatest achievement in black-and-white cinematography during the year 1941 went deservedly to Arthur Miller, A.S.C., for "How Green Was My Valley." The Award for the year's best achievement in color cinematography—for the first time a full-sized statuette, rather than a plaque—was presented jointly to Ernest Palmer, A.S.C., and Ray Rennahan, A.S.C. This award marked Rennahan's second appearance in the winners' circle—the first cinematographer in fourteen years to repeat—as he had received the color award two years ago for his participation in photographing "Gone With The Wind."

The Award for the year's best achievement in special-effects photography and sound was deservedly won by Farciot Edouart, A.S.C., and Gordon Jennings, A.S.C., for photography, and Louis Mesenkov for sound, for their outstanding work in "I Wanted Wings."

A Special Award was presented to Ray Scott for his achievement in photographing and producing "Ku Kan," the epic film of China's struggle against Japan, which was originally filmed in 16mm. Kodachrome, and is now going into national release in 35mm. Cinecolor.

Never, in the opinion not only of this writer but of a majority of the photographic community, have the industry's premier photographic honors been more fittingly bestowed, nor more deservedly received. In some past years some of these awards may have been subject to question (as was the general by-passing of "Citizen Kane" in so many classifications this year) but as regards the current phototechnical awards it can be said without hesitation that against some of the strongest competition in award history, the best men and the best work won out clearly.

It is perhaps sufficient tribute in itself to Miller's achievement in bringing "How Green Was My Valley" to the screen to say that in a year which included such superlative examples of the camera's potentialities as "Citizen Kane," "Sergeant York," "Here Comes Mr. Jordan," "That Hamilton Woman" and "Sun-down," to name only a few, that Miller's achievement should be selected by vote of his fellow-cinematographers as the year's best. But by way of explanation to those who may not as yet have seen this production, we cannot help quoting from our review of that production, which appeared last month. At that time we said (with no intention of being prophetic) "The results of the Academy Award balloting won't be known for another month yet, but Arthur Miller's

achievement in bringing this picture to the screen is sure to rank very close to the top in any listing of the best photography of 1941. To our mind, 'How Green Was My Valley' rates as one of the two supreme examples of fine photography in a year which had more than its full share of outstanding camera-work.

"Miller makes eloquent use of the modern increased-depth technique. But he does it without lapsing into the brittle artificiality which has so often accompanied the use of this technique. His scenes have depth—often to a surprising degree—but they also have qualities of 'good photography' which are all too often lost in attaining unusual depth of field. His scenes have depth, yes; but they also have a lifelike roundness, a soft plasticity of image, and a pleasing gradational range which have all too often been sacrificed in pursuit of depth.

"Miller's achievement is a great one, though, not simply because of his perfected use of this modern technique, but—and most importantly—because of the sensitive artistry with which his photography is attuned to the many-changing emotional moods of the story. . . . Miller's camera, compositions and lighting follow these moods and enhance them with flawless perfection. It is in no way detracting from the powerful story, from John Ford's inspired direction, or from the deeply moving performances of every one of the players to say that without the perfect sincerity of Miller's camera-treatment, 'How Green Was My Valley' would not have been the deeply human document it is."

For a good deal longer than the fourteen-year history of the Academy Awards, Arthur Miller has been reckoned as one of the industry's greatest masters of the camera. Since the Awards have existed, more than once he has been listed among the nominees, with entries not only in black-and-white, but in Technicolor. That he has won this year is a tribute to flawless workmanship. That his winning is so universally approved by his fellows is an equal



REPEATER! First cinematographer ever to receive two "Oscars," Ray Rennahan, A. S. C. (right), receives Academy statuette from George Barnes, A. S. C. Photo by Pat Clark.



tribute to one of the finest gentlemen in the camera profession.

The achievement of Ernest Palmer, A.S.C., and Ray Rennahan, A.S.C., in capturing first honors in the color division with "Blood and Sand" is no less significant. Not only did their effort prove the outstanding color production of the release-season, but it also was what is to date the outstanding achievement of the truly expressive use of color, in which color is used for dramatic as well as realistic effect, not as an "arty" subterfuge, but as legitimately and thoughtfully as lighting and contrast in a monochrome film are keyed to dramatic mood.

In reviewing this film, we said, "Ernest Palmer, A.S.C., and Ray Rennahan, A.S.C., have given 'Blood and Sand' a Technicolor mounting which must inevitably rank high among the finest Technicolor achievements 1941 will produce. . . . They have kept reality well to the fore, but have at the same time kept the chromatic key of the picture subtly attuned to the dramatic mood of each scene and sequence. And they've done it as naturally and smoothly as a monochrome cinematographer's parallel trick of suiting the visual key of his lighting to coordinate with the dramatic requirements of scene and sequence. To this reviewer's mind, it is a technique which must ultimately become as completely a part of good color cinematography as is the use of lighting to create visual moods in monochrome.

"In 'Blood and Sand' these two photodramatic techniques are used side by side to impressive effect. . . . Lighting and composition are of the highest order. Merely to single one scene or sequence out for special mention would be to do an injustice to a picture every inch of which seems an exciting example of camera pictorialism. What Palmer and Rennahan have done should be seen—and studied."

The special-effects award to Farciot Edouart, A.S.C., and Gordon Jennings, A.S.C., is another example of credit given where credit was most emphatically due. Since this award is given jointly for special effects in both photography and sound, and its selection is participated in by recording engineers and set-designers as well as by cinematographers, we have at times past found some of the selections open to question, in that sound or set-design seemed to govern the choice, virtually to the exclusion of photographic special-effects.

But this year, such is happily not the case. We cannot offhand think of a single production which has owed a greater debt to the special-effects specialists. Very literally, "I Wanted Wings" could not have been made without the special-effects contributions of Edouart and Jennings. Without their achievements, the production would have been technically, economically and physically impossible of filming.

When we reviewed the film, nearly a



CONGRATULATIONS! Left, George Barnes, A. S. C., beams as Color Award winners Ray Rennahan, A. S. C., and Ernest Palmer, A. S. C., receive their Awards. (Photo by Frank Powolny.) Right: Farciot Edouart, A. S. C., receives Award for year's best special-effects cinematography from Col. Darryl F. Zanuck. Photo by Pat Clark.



year ago, we said of the special-effects work: "The film owes an incredible part of its success, both technically and dramatically, to the superb process-work of Farciot Edouart, A.S.C., and his staff. That the production is among the best air films ever made stands much to the credit of Edouart and his associates, for in no previous air-film have the resources of modern transparency process-work been so extensively brought into play. And a very great part of Edouart's work is based upon the tremendous possibilities stemming from his development of the ultra-powered triple-head process projector. Without this, it would have been impossible to get the many long-shots in which the players are seen taking off, flying and stunting in angles which show virtually the entire plane, and convincingly make the plane not merely fly level, but climb, dive and roll—all in angles which give the effect that the camera was flying right alongside, about as near as the plane's own wing-tips. To this reviewer's mind, the amazing scope and flexibility of the transparency-work is perhaps the outstanding single feature of the film. The picture could never have been made without Edouart's superlative contribution.

"Gordon Jennings, A.S.C., is broadly credited with 'Special Photographic Effects,' and he, too, has done a masterful job. 'Special Photographic Effects' covers a wide range of achievements in this case: among them are miniatures, matte-shots, and optically-printed composites which very skillfully blend straightforward photography with what this reviewer at least guesses to be animation. Again it can be said that the picture could never have been made without the parts that Jennings and his staff contributed."

The Award for Sound Recording went to Jack Whitney of the General Service Studios for the recording of Alexander Korda's "That Hamilton Woman." This marks another Academy Award milestone, for it is, we believe, the first time that honors for sound-recording have gone to a service or rental studio rather than to the sound staff of a major producer-owned plant.

Honors for Art Direction in black-and-

white went to Richard Day and Nathan Juran for "How Green Was My Valley," and in color to Cedric Gibbons and Urie McCleary for "Blossoms in the Dust." The newly-established awards for set-decoration in monochrome and color went to the same pictures, with Thomas Little and Edwin B. Willis the respective recipients.

As has become almost traditional, no Class I (statuette) Award was made for Scientific or Technical Achievement. Two Class II (plaque) Awards were made, and five Class III (honorable mention and certificate) Awards.

The Class II Awards given were in the fields of laboratory practice and sound-recording. The first was presented to the Electrical Research Products Division (ERPI) of Western Electric, for the development of the precision integrating sphere densitometer. The other was awarded to the RCA Manufacturing Company for the design and development of the MI-3043 unidirectional microphone.

First of the Class III Technical Awards went to Ray Wilkinson and the Paramount Studio Laboratory for pioneering in the use of, and for the first practical application to release-printing of fine-grain positive stock. The second was given to Charles Lootens and the Republic Studio Sound Department for pioneering the use and for the first practical application to motion picture production of Class B push-pull variable-area recording, which as stated in the citation has eliminated distortion introduced by noise-reduction systems and at the same time has reduced film noise by at least 6db.

The third of these awards was presented to Wilbur Silvertooth and the Paramount Studio Engineering Department for the design and computation of a relay condenser system applicable to transparency process projection, delivering considerable more usable light. By means of this recomputed condenser relay system, a light-source of the same intrinsic intensity and a projection lens of the same speed of previously designed systems will collect and deliver to the

(Continued on Page 128)



# MOVIES REPORT ON DEFENSE PROGRESS

By CARL PRYER, A.S.C.

**T**ODAY, after less than twelve months of actual work, the first production unit of the Office for Emergency Management is currently engaged in putting the finishing touches on production No. 36.

How a small production unit of this kind, which, with one exception, has never consisted of more than five men in the field at one time, could have produced the large number of films at a speed and of the quality which we have, and at the small cost involved, is one of the mysteries of the film trade.

There is no secret about it and certainly no mystery. I believe that our success may be attributed to several factors: first, by applying common-sense to all our plans and methods; second, by advance planning and thought; and third, because we are a small congenial group who have learned to work well together, each recognizing and respecting the other's ability and responsibilities and doing our work as well and as quickly as we are able without any more "fuss and feathers" than is necessary.

Our small compact unit consists of a Director of Photography, (myself); an Assistant, Russell S. Anderson; one electrician, James Dolan; and his helper-driver, Richard Collins. Our equipment consists of a Bell & Howell camera of the shift-over model, all the necessary lenses and accessories for which we have any possible need; a turret-model Eyemo; a station-wagon which carries this equipment and three persons, and a 1½-ton truck which carries our lighting equipment, the driver and electrician.

Since the beginning this single crew has been working on full time with two alternate directors. This arrangement has been one of the reasons for our success. The two directors, George Gercke and Guy Bolté, divide their own time between first, research and writing a working script for the next picture, and second, production. While one is making advance preparations, the crew is working with the other. Thus we are currently shooting "Lake Freighter," a story of the iron ore so necessary to the war effort, conceived and written by Mr. Bolté; and concurrently, George Gercke is putting together on paper the ideas for the next picture, which also has to do with the problems of national defense. In rapid succession Gercke and Bolté have alternated between "Army in Overalls," "Aluminum," "Women in Defense," "Bomber," "America Builds Ships," "Housing for Defense," "Tanks," etc.

So simple and yet so effective is this plan that often the crew, after a thorough preliminary inspection with the Director of the scenes involved, are able to proceed with the work, while the Director is engaged in other and more important details.

All of the pictures produced at this writing have not been released. Some of them are completely cut and edited, awaiting a release-date, while still other material is now in process. The current release, "Women in Defense", is now being shown in 14,000 theatres with 600 release prints.

Two additional and most important factors have made this work possible:

first, the overall general supervision of Arch A. Mercey, of the Executive Office of the President, who, until his recent appointment as Deputy Coordinator of Government Films, made all contacts with the Army, Navy, defense plants, and departments of the Government to get clearance for the crew in the field, and who, with his associates, passed on all story material and features of the shooting policy; and secondly, the cutting and editing department in New York under the general supervision of Philip Martin Jr. Martin has created a very compact and efficient staff of cutters, editors and sound-men, with all necessary cutting-rooms, storage-vaults, projection-rooms, and in fact, all that is necessary to put a picture together. This is one of the most highly efficient units of its kind I have ever seen. All material is delivered direct from the camera to this unit.

The story behind the creation of this film-unit as a whole is, I believe, worth telling.

When the National Defense Advisory Commission was created, the Administration decided—and very wisely I think—that the public in general and the taxpayer in particular, were entitled to know, insofar as it is possible to tell them without revealing actual military secrets, just what was planned and what was being done on the defense program. A Division of Information was set up under the direction of Robert W. Horton, who was drafted from his position as Director of Information for the Maritime Commission, and a far-reaching and broad system of gathering and distributing "news" was set in motion. After consultation with a small group of men—all of whom had, in one connection or another been identified with the old U. S. Film Service (which had produced such epics as "The Plow That Broke The Plains," "The River," and "The Fight for Life" but which had ceased to function when an economy wave "washed out" their budget—it was decided that one of the most effective ways to inform the public in general about anything was through the medium of motion pictures. With this, most of us agree.

I have cast about for a suitable word to describe the films which have resulted. "Documentary," "educational," "teaching," "propaganda," and similar words have been so badly abused and kicked around by one faction or another that they cease to convey the meaning for which they were originally intended. I think the best description of films of this type must be "factual" films. For such they are. They do not reflect or interpret any one's ideas nor do they change the facts in any way, shape, or form, but





they *do* show actualities without fear or favor. Scenes are photographed just as they are found, without "glamorizing" or change. No posing, no staging, for the most part catch-as-catch-can, with very little choice of camera angles—such films do in fact present actual records as they are found.

After considerable preliminary discussion, the first film was designed to show the Maritime Commission training program, a subject with which Mr. Horton was thoroughly familiar. George Gercke, one of the original Film Service men, called in as Director in charge of production. A small (according to Hollywood standards) budget was set up and a very limited shooting-schedule arranged.

I was offered the opportunity of doing the camerawork, and although at the time I was engaged under Director Jack Glenn of *The March of Time* in shooting a story on Mexico, I was most anxious to participate in this new method of film reporting. I felt that such films could and should be important contributions to American history and that they could be made to serve a good and useful purpose in informing the American public about things they wanted to and were entitled to know. I knew that we would have to start on a very modest scale, but I felt that the importance of the work would soon be recognized and developed to a point where it would be appreciated by the theater-going public and management and the Administration as well.

Director Glenn was most sympathetic and kindly consented to release me from my obligation to *The March of Time*, with which I had had three years of most enjoyable association. Accordingly, on August 8, 1940, I joined Director Gercke and a ready-made crew at St. Petersburg, Florida, where it was proposed to photograph the U. S. Maritime Commission training ship "Joseph Conrad," a famous old square-rigger which had sailed down the Atlantic coast to meet us at that point, with a crew of trainees. We were also to photograph the larger steam training ship "American Seaman," which puts the finishing touches on some three or four hundred student seamen at a time during a real ocean cruise.

Originally, a forty-day shooting schedule had been set up with a very limited budget and the itinerary called for scenes on these two boats, as well as scenes at sea on one of the larger cargo boats such as the "Mormacpen" operated by the Moore-McCormack Steamship Company, the training school on Hoffman Island in New York Bay, and the advanced schools in Boston Harbor and New Haven, Connecticut.

In this instance we had not only the weather to contend with as is usual and expected, but due to causes over which we had no control, we lost ten precious days at the very start. On the way south, the "Joseph Conrad" ran into a storm which carried away all of her canvas so that she arrived in St. Petersburg under bare poles. Ten days would elapse before spares could reach her.

This was discouraging but not disastrous as we still had the "American Seaman" to fall back on; we decided to reverse our program and shoot the "American Seaman" first, putting out to sea for an off-shore cruise where we could picture the student seamen doing their stuff. No sooner planned than—Bang!—out went a generator head on the "Seaman" and she, too, was laid up for at least two weeks before repairs could reach her!

Sadly we contemplated our schedule, and our budget. Nothing remained to do but to reverse our whole plan and start at Hoffman Island in New York Bay and return south when both boats were again in commission. This we did, but it still added up to ten days' lost time.

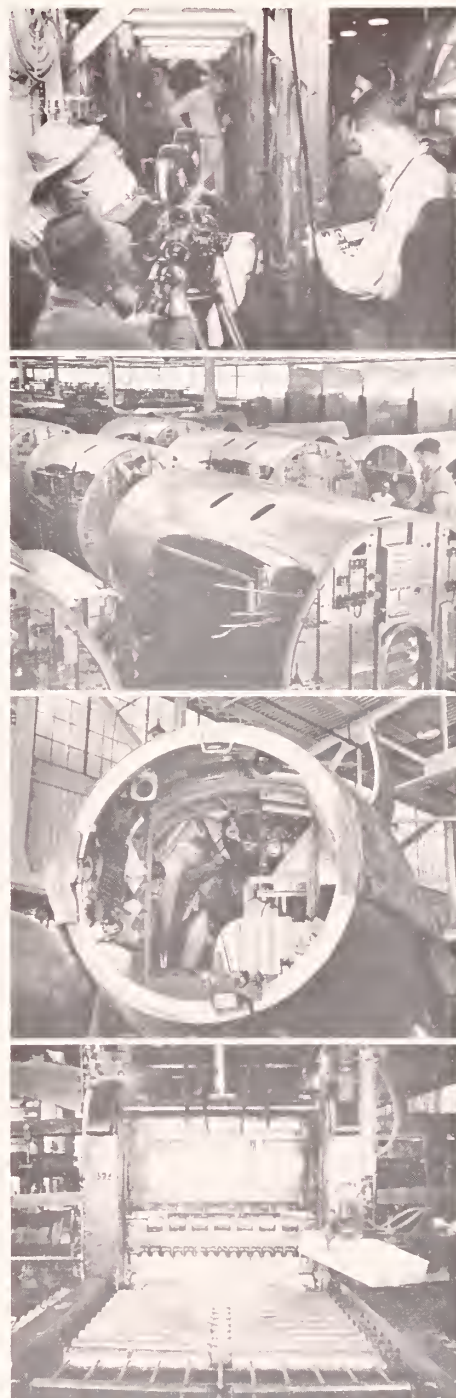
Hoffman Island, a tiny dot of land at the entrance of New York harbor, was used in old days as a quarantine station, but in more recent years has been of little value or use. At the beginning of the defense program it was taken over by the Maritime Commission and used as a training station for the Merchant Marine. Here a school of great importance has been established for the training of American seamen in all branches. The whole program is administered by the U. S. Coast Guard. It is said that the graduates of this school are snapped up by merchant steamship companies instantly. It also provides advanced training for seamen and AB's so that they are able to secure better ratings and pay. No matter what their previous experience, every student is required to take and become proficient in life-saving, the use of life preservers, shooting the Lysle gun, breeches-buoy, etc., training designed to enable them to cope with the present problems of ocean travel. This training program provided material for a picturesque and exciting film sequence.

Later we transferred to the training school at Gallup's Island in Boston Harbor where advanced radio and electrical instruction is given those already experienced in that work and still later to the school in New London, Connecticut, where only Masters and Mates see advancement.

The whole provided material for a film sequence, both interesting and important.

The technical requirements of such a small production unit is rather confusing to those accustomed to Hollywood standards. The first requirement is absolute mobility, to travel quickly and cheaply under any conditions—plane, auto, boat (and I mean small boats), train, or what have you. Equipment must be reduced to a minimum, both as to camera equipment and lighting equipment for interiors.

For this first picture we used an Akeley Camera, and in view of the tough spots and, the speed with which we had to work, it proved an ideal outfit for the job. Our lighting equipment consisted solely of photofloods—No. 4's in reflectors, No. 2's and 2R's in reflectors with clamp bases and, of course, lots of raw bulbs which could be used in fixtures



Top, Carl Fryer, A. S. C., filming "Bomber" in the Martin Aircraft factory. Below, scenes from "Bomber"; bottom, aluminum rolling-mill scene from O. E. M. film "Aluminum." On opposite page, Carl Fryer, A. S. C., on location at Langley Field, Va.

built into the boats or classrooms. DuPont stock was used throughout the job, Type 1 for all exteriors and Type 2 for interiors.

In view of the equipment used and the subjects covered, the results were truly remarkable. The writer, being trained in the old school, was perhaps better acquainted with getting results under poor conditions than the average. Every advantage was taken of natural sources of light. Every outlet for interior light was used even with No. 1 photofloods, and an endeavor was made at all times

(Continued on Page 141)





Light-test strips from five of Miller's split-screen filter tests. Right-hand exposure in each is normal, unfiltered shot. Tests include (left to right) Aero 1; G-15; 29-F; 72, and 23-A-56 "combination." Note overexposure in red-filtered tests, made with factory-recommended filter-factors.



# Filter-Factors For Daytime Night-Effects

By VIRGIL E. MILLER, A.S.C.

**W**HEN Panchromatic film first came into use, I became a filter-Factor "fan," because it opened up a new field in exterior photography. Orthochromatic negative, being sensitive to the upper or red end of the spectrum, gave us untrue renderings of color-values; the bright end of the spectrum photographed dark; reds were black on the screen; orange and yellow and green took on nightly hues that beautifully camouflaged the true relative brightness of the objects being photographed.

Nearly twenty years ago I made my first experiments with Wratten filters; at that time I made a split-screen test of all the filters then available, not only comparing the unfiltered to the filtered values, but further comparing one filter against the other. I will not go into the fundamentals as we all know then, *i.e.*, a red filter permits the passage of the red rays and stops the blue, etc.—those facts are self-evident to all cameramen. But from the start I found certain limitations being imposed by the use of single filters; I could easily secure "over-corrections," but they weren't believable.

For instance, I was sent out by the Universal Studios to photograph in a night-effect shot, a train of cars crossing the desert country just above Toluca, (later Lankershim and now called North Hollywood). I used my red filter; it turned my sky black, but all my red cars came out white—a ghost train was the result.

Knowing that panchromatic film of that period was almost insensitive to green, I decided that perhaps a red filter plus a light green filter might give me truer renderings of red objects and still give me a black sky and also permit the headlight on the locomotive (or automobile) to register.

I had purchased a book of filters from Howland & Dewey (now Los Angeles' Eastman Kodak Stores) and had one green filter to experiment with on this particular assignment. The test exceeded expectations and those who saw it declared it the nearest to real moonlight they had seen. I exhausted my supply of green gelatin, and could not secure any more in Los Angeles. I ordered three squares (3") at \$1.80 per square; with them I received a letter from Dr. C. E. K. Mees, A.S.C., of the Eastman Kodak Company, asking what I intended using them for.

I wrote back, saying that the No. 56 green in combination with the No. 23-A

or the No. 25-A gave me very believable "night renditions" in the daytime.

I received a letter saying such a combination would give me nothing on the film, since such a combination was complementary.

I sent Dr. Mees a roll of the film "shot" with the combination; his letter in reply said that they were astounded and that their film was possessed of qualities of which they were unaware, and that he would be on the coast shortly and wanted to talk to me. Needless to say, we met a few weeks later and he commended me very highly for what I had done . . . thusly "combination filters" were "born" twenty years ago.

Down through the years panchromatic film has been improved to the point where it is sensitive to the entire spectrum; in addition, we have our "infra-red" negative that lets us explore the invisible reds and completely eliminates all or most of the shorter wave-lengths. Night-effects are obtainable with this infra-red, but to most of us such effects are so greatly overcorrected that they are often unbelievable. It is for this reason that a truly panchromatic negative yields results more believable and therefore more satisfactory for picture purposes.

Since Twentieth-Century Fox Studios use Eastman negative films exclusively, my recent experiments have been confined solely to that film. The split-screen tests illustrated were made on Plus-X, and were made during the noon hour, inasmuch as the light changes vary less during that period. I used Wratten gelatin filters, behind the lens to make them less susceptible to extraneous light. The background remained the same for each half-portion of the frame; I "panned" over to include exactly the same area.

After ascertaining the footage desired for the entire series of tests of filter values, I matted off one-half the aperture and photographed the scene unfiltered, using a meter for determining a printing range suitable for the purpose. I then rewound the film and, using the identical background, immediately photographed about twenty feet with each of the filters used, viz: Aero 1, Aero 2, G or 15, 3N5, 5N5, 21, 25, 29, 72, 23A-56 and 25A-66.

The negative was developed normally and the positive was printed on ONE light, based on the best printing value for the unfiltered side of the negative.

My first test, in which I used the generally accepted filter factors issued by

the various film companies, revealed one thing definitely; the factors used for day renderings were approximately accurate; those used for night-effects were much too high. This was evidenced in our running of the film, as it varied in its densities. Had the factors been correct, the densities would have varied only slightly.

Please understand that I am not talking now of color-corrections and their variations, but of over-all densities. Factors, as they are called, are primarily useful in securing proper densities; they have nothing to do fundamentally with color-renderings. In other words, a Director of Photography must know what filter to use in order to secure the color rendition he desires; only experience can accurately determine his choice; after that, he should know the factor to be used in order to bring his preconceived color renderings within the scope of the laboratory's printing limits.

Using my first test as a key to factor changes necessary to balance my densities, I shot another test. This second test more nearly fulfilled the requirements for balanced densities. As mentioned, the "day" values were very close to those obtained by using the prescribed factor values; the appended table shows only slight differences. But those factors used for night-effects in my second test show wide variations from those generally recommended, as may be seen in the table.

The following filters are those most used for night-effects.—Numbers 25, 29, 72, 23A-56 and 25A-66. It is this group that I found necessary to alter in factor values in order to give me suitable and believable night-values well within the limits of our laboratory's printing range.

Filter	Commonly Accepted Recommended	
	Factor	Factor
Aero 1	1.25	1.25
Aero 2	1.50	1.50
3N5	4.	4.
5N5	5.	5.
G-15	3.	2.
21	3.5	2.5
25	7.	4.5
29	15.	7.
72	Wide Open	12.
23A-56	7 to 15	5.
25A-66	7 to 15	5.

I have used two combinations above shown; either are very acceptable, but personally I prefer the 25A-66 for this reason; the 25A better corrects for night values and the lighter 66 green retards the heavier red in rendition of face values. Circumstances alter cases and perhaps the 23A and the heavier 56 green may give a little more detail where less sky correction is needed, and face values are not so important.

A further discussion of factors would be only "painting the lily" since cinematographers are well aware of their general uses; a comparison of the illustrations will bear out the general theme of this paper and emphasize the fact that I have tried to bring out, viz: that there has been a tendency to use factors too high to secure the intended results. END.





## PLANNING

# Employee-Training Films For Victory

By W. G. CAMPBELL BOSCO

**N**OW that America has been brought face-to-face with the reality of war, the industrial motion picture for employee-training (especially in 16mm. form) will have an opportunity to come into its rightful heritage as an integral and economic part of modern industry. Properly conceived and efficiently used, the employee-training film can play a vital part in hastening the day of Victory.

The history of the last two years prove, and the words of our national leaders confirm, that success in modern war lies with the side having the biggest capacity to produce the machinery of war. And we know that that being the case, the United States is more than ever invincible because we have the greatest potential industrial force in the world. So the result is not in question. The question is, 'How soon'? And the answer to that is how quickly we convert our vast potential into actuality. Every day gained in making that conversion will mean less sorrow and suffering for some of our fellow men.

The basic ingredient in industry is manpower; the training of that manpower to perform new tasks imposed by a wartime economy is a prime factor in converting into actuality our great potential strength. The use of motion pictures to facilitate and speed the training of men and women for industrial skills has been proved again and again. Leading industrialists have been quick to grasp the possibilities of this powerful new educational medium and they are turning its usefulness into ever more diversified channels. But despite this

success, and the endorsement of the army and navy, who are today the largest users of personnel-training films, there are still some employers who have to be "sold."

One way to sell an employer on the advisability of having one, or a series of, training films made is to respectfully bring to his attention the successful use of this medium by others. Don't take for granted that he already knows. Perhaps he doesn't. And if he does he has possibly been too busy and too concerned with what he considers more immediate problems to give the idea proper consideration. Let us remember that if there is one useful thing about war, it is that it does jar us loose from some of our previously set convictions and speed up the use of newer, better and more efficient means of operation.

The enormously successful application of modern methods for selecting, classifying and training personnel used by the suddenly mushroomed aircraft industry, with its resultant publicity, has done a great deal to encourage the average employer to consider the motion picture and other modern methods of employee-training in a more kindly light.

A good training film should make full use of the latest findings in employee psychology, the first rule of which is to make each man or woman realize his or her importance to the work he is doing. When a worker really feels that his contribution is important, his efficiency increases considerably; when, on the other hand, he is allowed to feel that he is just an unimportant cog in a big wheel and he wouldn't be missed any-

how, the reverse is true; that man's efficiency drops way below normal.

Startling and conclusive evidence to support these facts was recently revealed after an extended study in the Hawthorne Plant of the Western Electric Company. There, workers who were made to feel that their work was important and not just run-of-the-mill stuff, responded by increasing their efficiency tremendously and continued to do so even when they were, for the purpose of the study, made to work under what would ordinarily be adverse conditions. Here is a real challenge to the training-film producer.

It is a well known fact that the audience of a motion picture puts itself in the place of the characters on the screen. They suffer and triumph with the hero, puzzle out the baffling clues with the invincible detective, and thrill with the ardently wooed heroine (at least I'm told that's the reason for the love scenes!) But the audience only reacts that way when the scene is convincingly done. If it is not, the small boys who always seem to be sitting in the front row have an effective, if unmusical, way of showing their disapproval.

The training-film producer has the same job of making his scene and his characters convincing if his picture is to perform at maximum efficiency. Of course he doesn't have, nor does he need, the background and emotional by-play of the theatrical screen-play. But he does have as a subject something that is more vitally important to his audience than the subject of any other movie they have probably witnessed... their job, and the way it should best be performed, by themselves. That is the wedge the training-film producer has into the hearts and minds of his employee or potential employee audience. That puts his foot in the door and gives him a chance to make the most of his sales-talk. If his sales-talk is properly designed it will banish the trainee's indifference or casualness towards his job and will, besides instructing him in correct methods and procedure, make him want to get off the bench and get in there and pitch.

My choice of the term sales-talk is deliberate: it is just that. Personnel directors know that enthusiastic employees are more productive and are less likely to disrupt organization by grievances and job-changing. And they know that an employee can be made more enthusiastic by "selling" him on his job. That does not mean the old fashioned "pep talk," although it still has its place, nor does pointing out the importance of a man's job necessitate a flattering or exaggerated appraisal. It does mean making a man feel that he is a definite and important part of an organization and that the particular function he performs is, along with numerous other functions, a necessary and integral part of the main project.

Men who have studied personnel-training say that employees respond

(Continued on Page 140)



# Scattered Light in the Focal Plane

By P. C. SMETHURST

**D**URING the past few years, the production of reflection-suppressing layers of metallic fluorides on optical glasses has opened up new possibilities of perfecting the photographic process, and some interesting claims have been made for improved performance when lenses treated with this process are used. It is, however, regrettable that the impression has been given that the lens glass-air surfaces are the sole factor involved in the appearance of scattered light intensities in the focal plane, and the purpose of the present notes is to rectify the position by drawing attention to some of the other important factors involved.

In the first place, it must be clearly realized that the level of illumination in the focal plane which is caused by scattered light is just as dependent on the total light-flux entering the lens as it is on the scattering factor involved in the glasses themselves. If double the total light reaches the lens glasses, then double the scattered light appears in the focal plane, assuming that one particular lens is in use, and it is the relationship between this value for total light-flux entering the lens and the exposure value given in the camera which will determine the maximum range of tones which can be recorded on the film. Putting matters more technically, scattered light level in the focal plane is the sum of all the image-point brightnesses, each multiplied by its particular area, whereas the true image has an illumination level in the focal plane which is (other circumstances remaining equal) proportional to the brightness *only* of each image-point in the subject.

With ordinary photographic subjects, the estimation of brightness area summed up over the entire subject is simplest made by arranging that a photoelectric exposure meter is suitably hooded to cover the field angle of the lens (the latter must be determined from the cut-off effect of the mount and diaphragm, and *not* from the negative area and focal length). Such a meter, when held up to face the subject, will give a reading proportional to  $\Sigma B \times A$  over the field covered by the lens, and it is precisely because of this action that the present writer has objected to the use of such meters for the determination of camera exposure. The relationship between a reading of this type and that given by an incident-light exposure meter will vary with the subject character, and will always indicate the extent to which scattered light intensity in the focal plane

will be present at a given exposure level in the camera.

For a quantitative examination of the relative illumination-levels produced by the true image and the scattered light, however, it is by far the simplest to assume that the subject has one brightness-value only, and extends indefinitely in all directions in front of the camera. Under such circumstances, we can find the minimum illumination in a hypothetical shadow which is formed by the scattered-light illumination level, and thus determine the maximum tone range which the lens will transmit under the conditions prescribed. The application of this conventional subject to practical photography will be touched on in a later paragraph. If we take  $\phi$  as the field semi-angle which the lens will cover (irrespective of the negative size used behind it),  $\theta$  as the angle subtended at the lens by the image-point in considera-

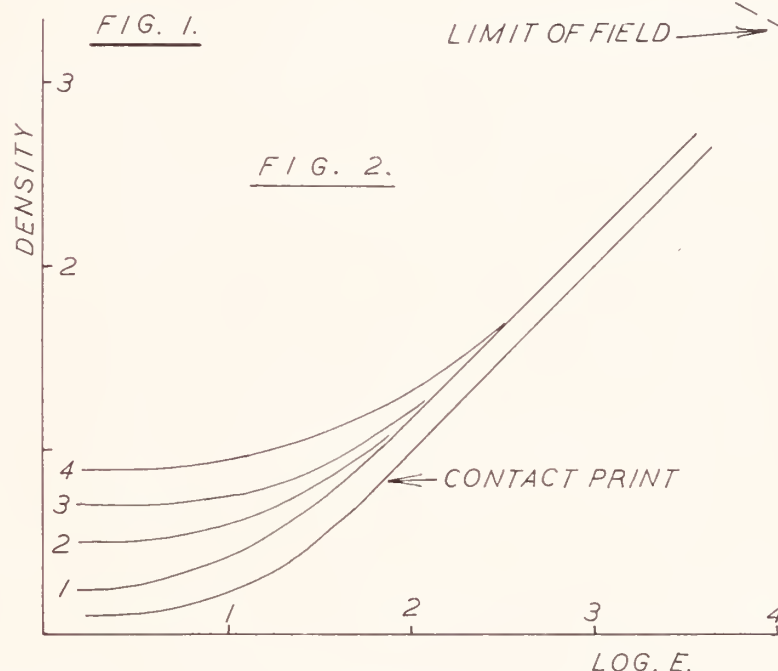
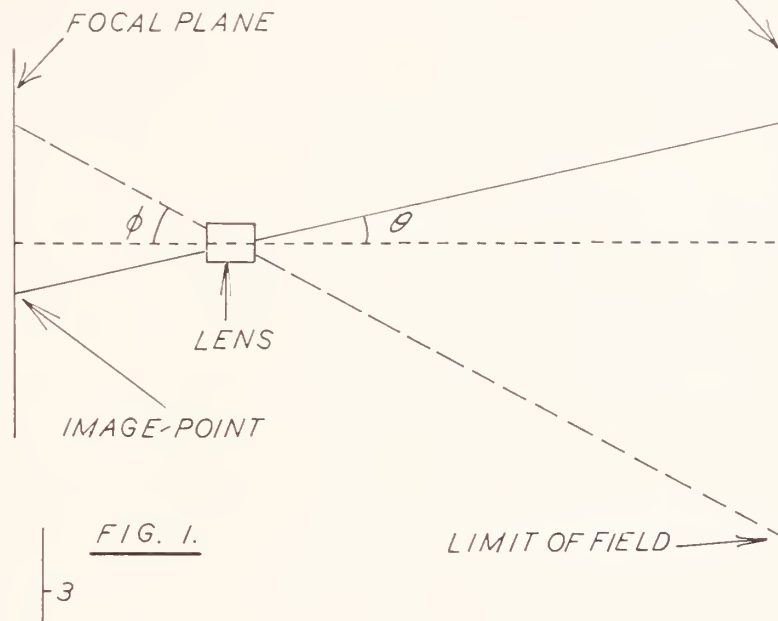
tion to the lens axis,  $f$  the usual stop number, and  $t$  and  $s$  respectively the transmission and scatter factors (in percent terms) of the lens, and if we assume that the light scattered by the lens emerges with equal intensity over the hemisphere behind the rear lens component, it is easy to show that the total illumination at any image-point consists of—

$$\begin{aligned} & \text{(True image + scattered light)} \\ & \frac{B \cdot \pi}{4f^2} (t \cdot \cos^4 \theta) + \frac{B \cdot \pi}{4f^2} (s \cdot \frac{1}{2} \sin^2 \phi) \text{ units.} \end{aligned}$$

(See fig. 1 illustrating the various symbols involved.)

This expression may be simplified if we take the image-point on the lens axis, since here  $\theta = 0$ , and  $\cos^4 \theta = 1$ , and if we write a constant  $K = B \cdot \pi / 4f^2$  (assuming that the stop and brightness values remain constant) at the same

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# Wartime Economies By "Pre-Photographing" Scripts

By JACKSON J. ROSE, A.S.C.

SOME people say this present war is a battle between the "have" nations and the "have nots." I don't pretend to know about that, for motion pictures, rather than world economics, are my specialty. But I do know that some of these economists are hitting the nail pretty closely on the head when they say that if our side is to win, we of the fortunate "have" nations must learn how to utilize our resources with maximum efficiency.

One of those resources—and an important one—is the motion picture. Whether you consider it simply as entertainment, or as a builder of morale and a carrier of propaganda, it is an important factor in modern life. And fortunately Hollywood is the world's greatest center of motion picture production.

In one way, though, we can find this a disadvantage. For, taken as a whole, the years have been very good to Hollywood's motion picture industry. Our financial position has been pretty consistently secure. Therefore, most of us have had all too little worrying to do about whether or not corners could be cut to save time, money and effort in making a picture. If the story called for a thing, that was it, and very few questions were asked.

But today we're in a war. That war is making increasing inroads on film production, not only in manpower, but as regards the supplies of the physical necessities of production as well. It's up to us to take every possible short-cut which will enable us to turn out our pictures with greater efficiency.

One of the most constructive steps the industry could take in this direction would be to establish a routine whereby our scripts could be more accurately planned for the camera before shooting starts. The most logical means of achieving this would be to call the man who will photograph that picture into consultation earlier—several weeks before actual shooting starts, so that with his camera-minded cooperation, the script could be, so to speak, "pre-photographed" before an inch of film is exposed.

Under the generally used system of cost-accounting, this would probably mean that the Director of Photography's salary would be charged against the production for several weeks longer than is now the case. Yet, far from increasing the cost of the production, this would in ninety-nine cases out of a hundred actually result in decreasing the overall expenses of that production! The cinematographer's salary for the two-



The scenes shown may not be actual examples of practices pointed out by Mr. Rose, but they illustrate the point. Note that in left-hand shot the large set is not necessarily essential for a two-shot such as is being made, and that an equally convincing effect could be gotten over (as right-hand shot) by table, two flats and a few props.

or three-week period during which the script gets its final polish, and sets and so on are planned and built, might amount to \$1500 or \$2000. But during that period, any cinematographer in the industry could take the average script and—simply by eliminating or modifying details of setting or action which aren't usually planned for the camera—eliminate an expense of anywhere from \$5000 to \$25,000 or more *which never has a chance of reaching the screen!*

To prove the point, let's take up a few practical examples of savings which could be effected by earlier participation by the cinematographer. Most of them will be recognized as typical incidents which happen every day in any studio—but which don't really need to happen at all.

One of the most prolific sources of waste in production is "overshooting," which means that thousands of feet of film are shot which never have even the remotest chance of getting into the completed release. And one of the commonest sources of this overshooting is in over-length scripts. The writers, presumably intent on assuring the maximum literary perfection for their story, rather naturally develop their scenes and dialog as fully as possible, but often with no thought of screen footage. The directors, intent largely on dramatic values, do their pre-production work on the script with the same attitude.

But when that script reaches the shooting stage, the practical considerations of footage begin to make themselves felt. The average feature production can contain only about 500 camera-scenes, and still be within its allotted release footage. Yet repeatedly we find such films being made from scripts which contain anywhere from a

thousand to 2500 script-scenes, each of which is almost inevitably to be broken up into two or more camera-scenes. In all too many instances, those surplus scenes are photographed, for the sets have been built for them, costumes made and players called.

When the film reaches the cutter, what happens? To get his picture trimmed to its release footage, he has to slash ruthlessly. Whole sequences are thrown out bodily. Others are shortened to a brief

flash or two of the most significant action. Inevitably this leaves great gaps in continuity. Sometimes these gaps are left as they are; at other times, they are bridged over with expensive "added scenes."

In any event, the net practical result is that a great deal of film, time and effort is wasted, and that often expensive sets are built and photographed which do not reach the screen at all. Much of this wastage could be prevented if the Director of Photography were able to participate actively in the final stages of preparation—if he were there to say "Wait a minute. Up to this point you've got a good story—but you've got twice as many scenes as we can possibly use. Hadn't we better eliminate some of the less important ones, and telescope others together, before we get the sets built?"

Again, in almost every studio, sets are frequently built greatly in excess of what the action really requires. Some directors appreciate this; many others, with their minds concentrated solely on the dramatic action, don't seem at all able to visualize what is to be put on the screen. For example, in one recent picture there was a sequence laid on the terrace of a big resort-hotel. I understand that the set built for this sequence included the entire terrace and grounds of the hotel, and part of the lobby, and covered the whole of a very large stage. But the action to be filmed consisted of only a few intimate two-shots of a couple at a table on the terrace, and one "walk-through" which could easily have been eliminated!

Frequently we'll see scenes which specify as their location a cafe or nightclub. The average set-designer or direc-

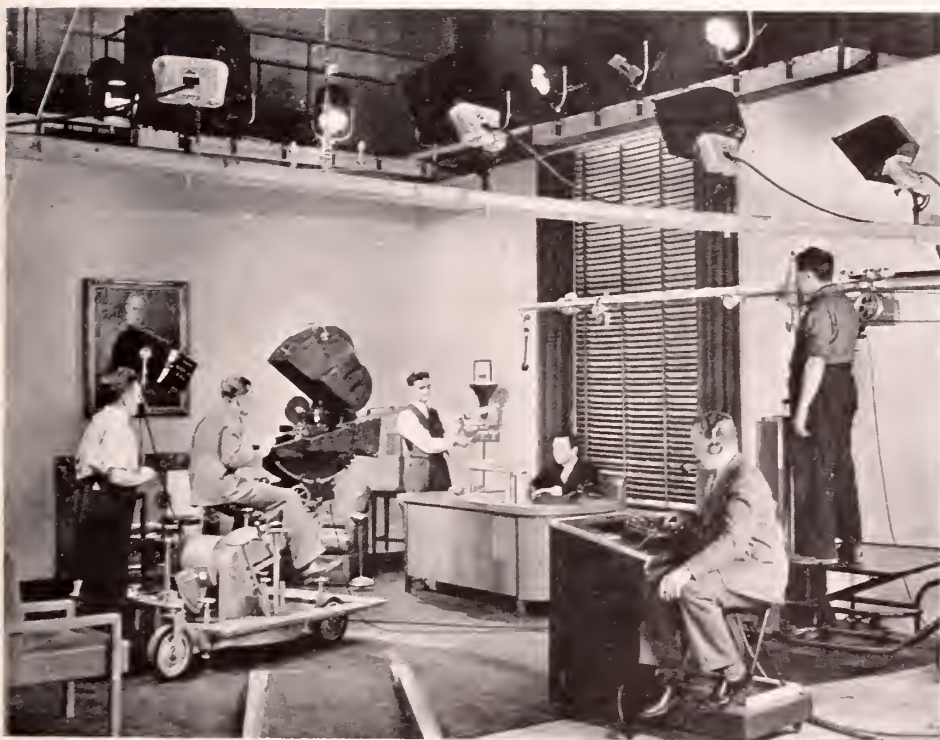
(Continued on Page 132)



We are proud to present herewith the first of a series of articles in which Mr. Larsen, one of America's foremost authorities on the professional use of 16mm., will deal in detail with the problems and technique of 16mm. professional production, including camera and recording equipment and their use, film products, editing and re-recording technique, set-construction, location problems, production planning, and the like. It is, we believe, one of the first, if not actually the first detailed discussions of 16mm. methods and equipment from a strictly professional viewpoint. It is the first of a number of similar practical features dealing with 16mm. commercial film work scheduled for publication in *THE AMERICAN CINEMATOGRAPHER* in the immediate future. **THE EDITOR.**

# Professional Production In 16mm.

By **JAMES A. LARSEN, Jr.**



Cinematographer Larsen at the camera filming an all-16mm. sound production for Coronet Productions.

**N**O one questions the remarkable progress which 35mm. motion picture production for theaters has made in the past twenty years. Anyone who has recently seen a film made in the twenties and compared it with a film made in the forties is apt to be amazed at the technical and artistic advances which have occurred.

These vast improvements have taken place so gradually that they have not been evident as they occurred but only became striking when a direct comparison of the product of two different decades is made. To a somewhat lesser degree, a comparison of a film made in the early thirties with one of 1940 or 1941, would reveal remarkable improvements. Recently, an opportunity for such a direct comparison was made possible when Paramount released the film "Glamour Boy" featuring Jackie Cooper. In the recent release of this film, there were several scenes showing Jackie Cooper as a child which were made in the early days of the talkies. Since these were placed in the film adjacent to scenes made last year, the comparison was striking.

Because so many professional cinema-

graphers have been close to the progress of 35mm. production, the fact that 16mm. production has undergone a parallel development and has attained professional stature has not been fully realized. With professional 16mm. camera and sound equipment and the fine-grain emulsions available today, it is possible to obtain results in professional 16mm. production which are difficult to distinguish from 16mm. reduction prints from 35mm. originals.

16mm. films are being shown in large auditoriums seating thousands of people by means of 16mm. arc projectors which deliver a brilliant image on a screen 30 feet or more in width from a picture less than half an inch wide. Special amplifiers and large auditorium speakers are available to deliver adequate volume for large audiences from 16mm. sound films.

Laboratory fades, dissolves and wipes, double-printing, multiple images and many other trick effects can be done in 16mm. by methods which will be described in detail in later articles. Direct 16mm. sound recording and re-recording equipment is available which makes possible the recording and mixing of any number of 16mm. sound-tracks.

By shooting on Kodachrome or on black-and-white reversal emulsions, it is possible to record both picture and sound on a single film with a 16mm. Sound Camera. With Eastman's new duplicating Kodachrome film, remarkably faithful color prints can be made from 16mm. Kodachrome originals, with or without sound. By a recent development, 16mm. Kodachrome can be enlarged to 35mm. Technicolor so that a whole new field of activity is opened to the professional producer of 16mm. films.

Nineteen years ago, 16mm. film made its bow as a convenient and inexpensive medium for amateur home movies. Today, 16mm. film is recognized as a dependable medium for the most complicated professional production of industrial, educational and even theatrical films. The last two decades have seen developments in 16mm. which parallel those of 35mm. and lag behind 35mm. by only a few years. Sound-on-disc came to 35mm. in 1927; to 16mm. in 1930. Sound-on-film recording on 35mm. film was done commercially in 1928 while the corresponding development in 16mm. took place commercially in 1932. A satisfactory three-color process came to 35mm. in 1934 in the form of Technicolor, followed only a year later by 16mm. color in the form of Kodachrome.

Thus it has been that every major step forward taken in 35mm. has been followed within a year or so by a corresponding step in 16mm. This growth of 16mm. from an inexpensive medium for amateur home movies to a thoroughly professional medium for educational, industrial and even theatrical productions, has been largely due to the persistent work of a small group of equipment manufacturers and producers who had faith in the results obtainable in 16mm. This group not only invented new equipment to use existing 16mm. film emulsions, but in some cases, prevailed upon film manufacturers to bring out new 16mm. emulsions more suitable to professional requirements. This cooperation between film and equipment manufacturers is one of the factors which has resulted in the successful achievement of professional results in direct-16mm. production.

A very substantial contribution to this progress was also made by the 16mm. professional producer, who in many cases suggested changes in equipment and film emulsions which made better results possible.

Although 35mm. film was standardized

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## Aces of the Camera XV: "TONY" GAUDIO, A.S.C.

By WALTER BLANCHARD

**T**HIRTY years ago the Biograph Company—then America's foremost producing organization—sent a troupe of its best actors, directors and technicians out to California, where they could keep on making movies outdoors throughout the sunny California winter. Somewhere along their route west—Albuquerque, I think it was—these movie-making tourists lined themselves up along the station platform and had their picture taken.

Prints of that old picture still exist. In them, you can recognize such early-day favorites as the Gish sisters, Henry B. Walthall, and others. And standing importantly in the middle of the group is a distinguished-looking gentleman with a white pique vest and a pair of truly impressive, flowing black moustaches. A most important member of

the troupe he was, too, for as the captions will tell you, he was Gaetano Gaudio, Biograph's ace cameraman, with whom rested the responsibility of capturing on celluloid the results of the forthcoming winter's work.

That was thirty years ago. But today, if you should visit the set at Warner Bros. where Ann Sheridan and Dennis Morgan are making "Shadow of Their Wings," you would find that the Director of Photography is this same "Tony" Gaudio, A.S.C., who now, as then, is rated as one of the industry's greatest cinematographers. He's one of the best known and best loved figures in the industry. He has to his credit over 1,000 successfully photographed productions, ranging from the split-reel 500-foot "features" of the early days to modern multi-reel super-epics like "An-

thony Adverse," with which not so long ago he won the Academy Award.

To him, that backlog of experience is one of the greatest assets any cinematographer can have. "Every day that you're shooting pictures," he says, "you run into new problems. But if you've been in the business a long time, and made lots of pictures, you'll find that most of these problems are only new on the surface. When you get down inside—to the essentials—you'll usually find there's at least a family resemblance to some problem you met and licked in a picture years ago.

"But don't get it wrong: I don't mean that if you come up against a problem in a modern picture you should try to solve it by doing exactly what you did ten or twenty years ago. Too many things have changed since then—and the cinematographer, just like anybody else, has got to be in step with the times. I do mean, though, that you'll do your job more efficiently if you can look back into your memory and find that resemblance. You know what you did then: now, to meet a similar situation, you take the basic idea of what you did then, and dress it up in modern clothes so that it works out well with modern materials and methods, and especially with modern ideas. That way, you take a short-cut that saves you trouble, and saves the company a lot of time and expense.

"Sometimes, when a cinematographer brings one of those old ideas up-to-date, they can hit modern audiences with all the force of a new idea. That's what happened, I think, with Gregg Toland's 'pan-focus.' A lot of us had for some years been slowly working away from the heavily diffused and rather artificially-lighted effects that used to be the style a dozen or so years ago, and trying to find something more realistic and modern. In 'Citizen Kane' Gregg had a picture that practically dared everyone concerned to be daring and break away from tradition. So Gregg turned to some basic principles that were almost as old as photography itself, and modified them to work with modern materials and to be in line with modern ideas. The result was something that seemed radically new to a lot of people.

"But it isn't only in big, spectacular things like that that experience pays. It is valuable every day in all sorts of little, routine details, too. For example, suppose the studio asks me to make a test of some new girl they've signed. Maybe today's audiences will look at her first according to how she resembles—or doesn't resemble—today's favorites like Bette Davis, or Ann Sheridan or Olivia De Havilland. If I tried to photograph her with that sort of thought in mind, I'd probably try to make her look like a pale carbon copy of one of those girls. Instead, I try to look at her for herself, and analyze her features. Maybe I see that she's got some features that resemble those of somebody I photo-

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# THROUGH the EDITOR'S FINDER

RECENT trade-paper headlines indicate that the major studios are considering, as a wartime move to conserve film, electrical power, chemicals, time, effort and money, the adoption of a rule whereby production units would be restricted to a maximum of three "takes" of any given scene. This looks like a worthwhile move—and one which could well have been made long ago, for very few scenes in the average picture are so exacting dramatically, or so intricate mechanically as to be beyond the possibility of filming successfully within three takes, if they have been prepared and rehearsed with sufficient care. The industry's photographic and sound crews almost invariably report their intricate operations "OK" at the first take. A number of the industry's most distinguished players and directors have established reputations as "one-take artists." Therefore, does it not seem logical to conclude that—always with the exception of the unusually difficult scene—players or directors who insist on rehearsing with film running through the camera to the tune of from eight to eighty takes per scene are, by inference, admitting either to incompetence or to unjustifiable vanity?

We'll wager that, should this three-take ruling be applied, we'd see the majority of our scenes captured successfully on the first take, for people who now tend to "walk through" the first several enactments of a scene they know will have to be gone through half a dozen or a dozen times would be on their toes to "give"—and give successfully—the first time if they knew they had but three chances.

But if the savings of material, time and effort obtainable through restricting the number of takes are so important, why not carry the idea to its logical conclusion? Why not strive to eliminate the film, time, effort and money that are now wasted on unnecessary "protection-shots," on over-length scripts which include scene after scene which can never reach the screen, on retakes and added scenes of action needed to tie the picture together, but which were originally missing from the script, and on retakes made necessary by lack of coordination between sets, costumes, locations, and the requirements of camera-presentation?

It could be done very easily, by calling the Director of Photography into consultation earlier in the making of a picture, so that his picture-trained mind could take an active part in the vital process of completing a script and preparing it for actual shooting. On the set his visualizing power, his technical skill and his photodramatic experience are daily being called upon to help repair or bridge over these gaps: but such emergency measures cannot make perfect something which was faulty to start with, nor can they create genuine efficiency in a system

which is essentially an inefficient make-shift.

Restricting the industry's scene takes to three will unquestionably effect economies the industry—and the Nation—need today. But great as these economies are, we're confident they would be equalled, and probably surpassed by the saving that would follow the elimination of useless "protection-shots," overlength scripts, avoidable added scenes and all the other wasteful, slipshod practices which could be avoided by camera-minded pre-production help in the planning of our pictures!

GLANCING over a list of the major Academy Award winners the other day, we were impressed by the way certain names kept repeating as two- and three-time winners of premiere honors in the directing and acting classifications. Contrast this with the fact that *no Director of Photography has ever won more than a single "Oscar" for the year's best camerawork!*

There are various explanations for this. Some may like to attribute it to luck—to the undeniable fact that some pictures offer inherent opportunities for outstanding cinematography, while others don't, and that the superlative opportunities don't come every year to even the so-called top-flight cinematographers. To us, this argument would hold water a great deal better if there weren't every year so heavy a proportion of the same names among the nominees—often enough for pictures which were outstanding achievements simply because the cinematographer, rather than story, conditions, locale or luck, had made them so.

The explanation we prefer is that the industry today has so many Directors of Photography of legitimately Academy Award calibre that no one or two men can be great enough to dominate the photographic field as consistently as Frank Capra, John Ford, Frank Lloyd and Bette Davis have so often outpaced the fields of direction and acting. True enough, the photographic profession has its stars no less than do the other phases of production—men whose names and achievements are with almost clock-like regularity among the Academy nominees. But for every one of these "aces" there are always fifteen other contenders with equal, and frequently superior achievements, to say nothing of a number of others whose work would merit equal recognition did not the nominations have to be limited to ten monochrome and six color productions. Rarely, indeed, can this be said for any of the other fields. By all evidence, then, competition for these two Photographic Awards must be adjudged not only the keenest, but on the highest level, of any of the Industry's annual honors, and the achievement of winning, perhaps the most praiseworthy of all the many achievements honored by the golden statuettes.

WHEN peace is at last restored at the end of this war, historians and dramatists alike are going to find a rich treasure in the billions of feet of motion picture film which are chronicling every phase of both sides of the conflict. Never before in history has any conflict been so authentically documented. Our own Government is drawing heavily on the skilled manpower of professional cinematography—both studio and newsreel—not alone for the making of instructional films wherewith to train combat troops, but for the making of a living record of every possible bit of major action. Our allies—Britain, Russia and the other members of the United Nations—are doing the same thing. Our enemies, perhaps even more thoroughly aware of the teaching, historical and propaganda value of films than we were at the outset, have made trained motion picture and still units as competely a part of every field force as machine-gunners or medical squads. The fall of France and the Low Countries, we understand, was recorded on some 20,000,000 feet of motion picture negative by German Army cameras. The camera-minded Jap is probably only a little behind this.

Today's historians have eyewitness accounts of Washington at Valley Forge, of Napoleon's retreat from Moscow; they have Brady's wet-plate still photographs of our Civil War and its leaders, and some comparatively few, flickery cine-films of a little of the action and some of the personalities of World War I. But already the military cameras of this greater conflict have brought us actual motion pictures of virtually every significant action from the Battle of France down to Pearl Harbor and to the latest raid on Japan's Pacific islands. We can see Britain's Commandos in action, our own A.E.F. landing in Ireland. We can see and hear great leaders like Roosevelt, Churchill, Chiang Kai-Shek and MacArthur telling in their own words the progress and problems of the conflict.

Camera and microphone are today recording in living form the story of this mightiest of conflicts. Today, they are telling those of us on the home front of the successes and set-backs, the victories and disasters, *as they happened*. Tomorrow, when they record—as record they will—the eventual victory, what a rich heritage they'll leave to those who follow!

DURING the last several months, we've received an unusual number of letters from our readers, both professional and amateur, telling us of things they liked or didn't like in the magazine, and often suggesting things they'd like to see in our pages. We appreciate those letters. They help us to make THE AMERICAN CINEMATOGRAPHER more nearly the magazine its readers want it to be.



# A.S.C. on Parade



Our Favorite Swede, Ray Fernstrom, A.S.C., dropped in to tell us he'll be missing "for duration" from his Hollywood haunts. Dusting off his Signal Corps (Photo. Section) uniform and waiting orders, he'll be Lieutenant Fernstrom from now on.

There are rumors, too, that Byron Haskin, A.S.C., is another member who counts his "A.S.C." as standing for Army Signal Corps. Well, Uncle Samuel has gone and got himself a darn good cinematographer. We'll miss you, Bun—and so, we'll bet, will the brothers Warner!

"Among the missing"—only temporarily, we hope—is the A.S.C.'s only East Indian member—Prasart Sukhum, A.S.C., last address Bangkok, Thailand (Siam, to you.)

Our sincerest sympathies to George Seid, Columbia's Laboratory Chief, on the loss of his son, Ensign Daniel Seid, of the Navy Air Force, reported lost in action.

Biggest film story of the month was lensed, not by any studio cinematographer, but by ex-Hollywood newsreel "aces" Joseph Rucker and Mervyn Freeman, who had the U. S. Navy performing for their cameras in a hard-hitting action story staged for Mr. Jap's benefit around the Marshall and Gilbert Islands. Send us enough more of the same, boys, and we'll be glad to keep next year's Academy "Oscar" in cold storage for you—!

This shouldn't be news to anyone who's seen "How Green Was My Valley"—but Arthur Miller, A.S.C., has been handed a richly-deserved new contract at Col. Zanuck's 20th-Fox picture-factory.

For that matter, the contract-inking department at T-C-F has been working overtime this month. Glenn MacWilliams, A.S.C., has been persuaded to spend the next year there, and Paul Eagler, A.S.C., will do the same, shooting process with Eddie Snyder, A.S.C., who, in turn, is subbing as Process Department Head for Lieutenant Solly Halprin, U.S.N.

Franz Planer, A.S.C., teams with Director Richard Wallace making Columbia's "Highly Irregular."

W. Howard "Duke" Green, A.S.C., planes down to Rio de Janeiro to take charge of Technicoloring Orson Welles' untitled Pan-American epic. As "production" lenser on the same film Harry Wild, A.S.C., gets a richly-deserved break into the big-time lensing field after making an outstanding name for himself filming RKO westerns.

Also Pan-Americaning is Will Cline, A.S.C., off to Central America to Technicolor a series of FitzPatrick-MGM shorts. He's driving to Mexico City, after which he'll fly and train through Guatemala, Salvador, Honduras, Nicaragua, Costa Rica and Panama.

Elmer Dyer, A.S.C., and his family must like music—or somep'n—for counting the static-boxes in the three cars, the Dyer household sports no less than 11 radios!

Clifford Stine, A.S.C., has enlisted in the Photographic Division of the U. S. Army Air Forces.

Fred Jackman, Jr., A.S.C., up and out again—but still a bit pale—after an emergency operation for a ruptured appendix. The Doc says he'll be recovered in time to film the next Pine-Thomas pic come the middle of March.

Eddie Cronjager, A.S.C., waving a cheery greeting as his big, black Zephyr makes Ye Ed jump for his life at a street-corner.

Peverell Marley, A.S.C., back on deck at 20th-Fox after a serious siege of bronchial pneumonia.

Jerome Ash, A.S.C., remarks these new built-in slaters that Universal is putting on the cameras are fine, but they rob the business of an outstanding sporting event—the Assistant Cameraman's sprint to get out of the scene after slating each take!

## Thanks

To our fellow-cinematographers of the Motion Picture Industry, who so signally honored us by voting us the Academy Awards for the best black-and-white photography of 1941, we wish to extend our sincerest appreciation and heartfelt gratitude.

Arthur Miller, A.S.C.  
Ernest Palmer, A.S.C.  
Ray Rennahan, A.S.C.

Lee Garmes, A.S.C., follows his old running-mate Ben Hecht to 20th Century-Fox, and inks a nice fat contract.

Lester White, A.S.C., draws the plum of photographing Edward Small's latest—"Annie Rooney" (no longer little!) with Shirley Temple.

Harry Perry, A.S.C., continues getting the nicest trips. RKO has just sent him to New York to film backgrounds for "It Comes Up Love," followed by a jaunt to Miami for more of the same.

"Hellzapoppin'" isn't the word for it as far as Elwood Bredell, A.S.C., and Universal are concerned. By way of thanks for the fine job he did putting the Oleson-Johnson flicker on film, Woody's been handed a fine new 5-year contract at the Valley plant.

And Skipper Verne Walker, A.S.C., over at RKO, has just had his option as Process Department Head lifted well ahead of schedule.

George Barnes, A.S.C., goes to Universal to film their big special, "Broadway." He's on loan from Selznick—oddly enough, while he's been under contract to D. O. S. for over a year now, he has yet to do a picture on his home lot, though he's done plenty of fine ones "on loan" since walking off with last year's "Oscar."

Marcel le Picard, A.S.C., draws the assignment to photograph "The Panther's Claw," first of the series of Anthony Abbott "whodunits" for Producers' Releasing Corp.

'Twas a pleasant surprise, dropping in at Paramount and finding Mark Sandrich and Fred Astaire had lured our old friend David Abel, A.S.C., out of his comfortable retirement on his Azusa ranch to film "Holiday Inn."

Stop-press flashes: Leonard Smith, A.S.C., recovering from a sudden severe illness . . . Charles W. Herbert, A.S.C., Universal's "Going Places" traveller, in town for an unexpected visit . . . Joseph Valentine, A.S.C., relaxing after finishing "Saboteur" with Alfred Hitchcock.



# PHOTOGRAPHY OF THE MONTH

## TO BE OR NOT TO BE

Alexander Korda Production, United Artists Release.

Director of Photography: Rudy Maté, A.S.C.

Rudy Maté, A.S.C., has made the visual aspect of Carole Lombard's final screen appearance everything that she or her most devoted friends could wish. Seldom, if ever, has this beloved star appeared to better photographic advantage. The film is, as well, excellent entertainment.

Maté's handling of the production itself is well worth seeing. He had a decidedly unusual situation to face: farce comedy counterpointed with strong melodrama and played against perhaps the most tragic background today's scene affords—Nazi-ruled Poland. To meet this problem, Maté departed radically from his usual photographic technique. His lightings are strong and forceful, yet often in a surprisingly high key for such melodramatic action. There is a curiously pleasing blending of a somewhat European technique with the "pan-focus" effects which have been coming into vogue during the past year. To one who was most familiar with Maté's work as shown in such recent releases as "That Hamilton Woman" and "Flame of New Orleans," it would seem almost incredible that the same artist should have photographed "To Be or Not To Be."

The production inevitably calls for a considerable number of effect-lightings, which Maté has handled with particularly good result. His rather extensive use of arc lighting also adds to the atmospheric value of the production.

The special-effects work of Lawrence Butler and the strikingly atmospheric sets of Vincent Korda are other highlights of a film which is from every viewpoint well worth the seeing.

## ROXIE HART

Twentieth Century-Fox Production.

Director of Photography: Leon Shamroy, A.S.C.

To really appreciate "Roxie Hart," you'd better see it twice—once to enjoy one of the funniest pictures of the year, and the second time to enjoy one of the most interesting examples of fine camera-work Leon Shamroy, A.S.C., has ever put on film. From the viewpoints of composition and lighting alone, almost every scene will repay careful study. Throughout the picture, his set-lightings provide a pictorially interesting, yet believable background for his action. This, in turn, is presented in a series of equally interesting portrait-lightings (especially in the cases of the men) which etch the characters with unusual reality.

Shamroy's treatment of Ginger Rogers is the best she's had in some time.

Apparently Shamroy, or someone there at 20th Century-Fox, was able to take the young lady in hand and convince her that the type of makeup she has been wearing in all too many previous releases was not to her own advantage. At any rate, with the best makeup we've seen her wear in a long time, and with the advantage of Shamroy's skill in lighting, she makes a more pleasing appearance than ever before.

Students of either professional or amateur screenwriting technique will find several interesting "twists" in story-presentation in this picture which also are well worth studying.

## THE REMARKABLE ANDREW

Paramount Production.

Director of Photography: Theodor Sparkuhl, A.S.C.

From its opening title—which is spoken, rather than written—to the final fade-out, "The Remarkable Andrew" is one of the more remarkable pictures of the season. Director of Photography Theodor Sparkuhl, A.S.C., does very well his part of making the picture visually interesting, as well. The action calls for a considerable number of effect-lightings, which he handles most interestingly, and the story and characterizations give him abundant opportunities for strongly effective portrait-lightings in his closer shots of the players—especially Brian Donlevy, as Andrew Jackson.

Centering as it does around the ghostly reappearance of Jackson, Washington, Franklin, and other famous historical characters, the picture inevitably calls for a good deal of split-screen and double-exposure work. Since no credit is given for special-effects, it is presumed that these trick-shots were done largely in the camera by Sparkuhl. If so, he has handled them uncommonly well, for many of these scenes take rank among the best examples of such work we've seen in a good while. It might possibly be objected that the story would have been more convincing if at all times when Jackson and the other ghosts appeared in the scene with any other players than the hero, who alone was supposed to be able to see them, they could have been presented by means of double-exposure, or even materialized and dematerialized in "Topper" fashion. However it must be realized that this would have been disproportionately difficult, with so many "ghostly" characters appearing in so many scenes, and as a matter of production practicability the course followed was probably best.

## DANGEROUSLY THEY LIVE

Warner Bros.-First National Picture.

Director of Photography: L. William O'Connell, A.S.C.

In making this picture, everyone concerned seems to have been working under a handicap. It is a low-budget production, and was made, moreover, during the period of the recent congressional inquiry into movie propaganda, and, so we gather, story and construction were repeatedly changed around to denature the film's anti-Nazi angles. The picture also appears to have suffered considerably in cutting, probably from the same cause.

In view of this, Director of Photography O'Connell has done a commendable job. Enough of his original conception remains to make it evident that he approached the picture with an interestingly unorthodox viewpoint. The story is a melodrama of Nazi espionage and counter-espionage. As such, one would normally expect to see it photographed in a comparatively low key, with strong melodramatic contrasts. But O'Connell approached it differently. Much of the plot hinges upon actually melodramatic things happening under circumstances where they outwardly appear normal and innocuous. Therefore, he has photographed much of the action in a normally high key, quite as though the film were a normal comedy-drama. This visual contrast between surroundings and the emotional mood of the action, interestingly enough, serves definitely to heighten the emotional response, making the story more effective than it would be if photographed in conventional melodramatic key. We'd like to have seen the film unutilized, as its writer, director and cinematographer must have originally planned it.

## THE LADY HAS PLANS

Paramount Production.

Director of Photography: Charles B. Lang, Jr., A.S.C.

"The Lady Has Plans" is hardly to be compared as an example of Lang's work with "Sundown," but he has given it the customary Lang polish. His high-key set-lightings are deft and decorative, and the players appear to good advantage. In the sequences where the action goes strongly melodramatic, Lang's effect-lightings are crisp and convincing. All told, it's an excellent job, but somehow we'd like to have seen the talent and effort expended on a bit more of a story.

## SULLIVAN'S TRAVELS

Paramount Production.

Director of Photography: John F. Seitz, A.S.C.

Transparency Process Photography: Farciot Edouart, A.S.C.

Preston Sturges' pictures always seem to run the proverbial gamut, and "Sullivan's Travels" is no exception. Cinematographer Seitz' camera has to run





Frame enlargement from two scenes from "Captains of the Clouds." Planes shown are not a squadron of full-sized "Hudson" bombers—they're miniatures.

# MINIATURES FOR 16mm DEFENSE FILMS

By BYRON HASKIN, A.S.C.

Head of Special-Effects Dept.,  
Warner Bros.-First National Studio

SINCE America's amateurs have been getting into production on Civil Defense Films, THE AMERICAN CINEMATOGRAPHER has been receiving an increasing number of letters which say in substance, "Dear Sir: I am making a 16mm. film on Air Raid Precautions for my local Defense Council. My script calls for a sequence showing an air raid, with bombs exploding, buildings burning, and so on. Can I do this as a miniature in 16mm.? If so, will you please tell me how to do it?"

Scenes like this can be done quite successfully in miniature with today's better 16mm. equipment. But if you expect success, you've got to approach your task in the right way. Don't think, because you're using miniatures, that they're either toys, or toy-sized, just because they're comparatively small. *Toys will never produce a convincing motion picture miniature scene.* Some types of scale models, such as the model plane and railroad hobbyists make, can be used very satisfactorily for movie miniatures. But you've got to plan, build and photograph your miniatures *as miniatures*, with the same seriousness and attention to detail the professional uses!

Virtually all movie miniatures depend for their effectiveness on two key factors: correctness of scale and perspective, and the use of high ("slow-motion") camera speeds. The first gives you the correct visual effect on the screen. The other smooths out irregularities of motion and creates an illusion of normal size and massiveness which, on the screen, will make your miniature appear like the real thing.

The amateur is somewhat handicapped in this latter respect. Very few 16mm. cameras will operate at a speed faster than 64 frames per second, while the

35mm. professional has at his disposal cameras which can be operated at from two to three times this speed. This means that to secure a comparable effect, the amateur's miniature must be built to a comparatively large scale, for obviously, to secure a given effect of massiveness on the screen either your camera should be turning over at a higher "slow-motion" speed, or your miniature built to a larger scale. For example, if you own or have access to one of the Victor cameras which have a maximum speed of 72 frames per second, you'll find you can use somewhat smaller-scale miniatures than you can with an outfit capable of only 64-frame speed. And if you can manage to get hold of one of the comparatively few "Golf Special" Filmos made by Bell & Howell, which operate *only* at a speed of 128 frames per second, you should be able to use miniatures about half the size of those you'd require for a 64-frame-speed 70D-A Filmo.

However, for most practical purposes, 64-frame speed will do well enough. For the best results, I'd strongly urge using miniatures built to a scale of 1 inch to the foot, though in a pinch, 1/2-inch scale miniatures will do fairly well.

Shooting at this speed, exposure can be quite a problem. Therefore, unless you're shooting your picture in black-and-white, where you can employ a super-fast film like Eastman Super-XX, and have an unusually abundant supply of lighting equipment to boot, I'd certainly advise you to shoot your miniatures outdoors. Plenty of professional miniatures—especially floods, large-scale marine miniatures, and the like are filmed outdoors, anyway.

Except in the comparatively rare instances where you are deliberately trying to suggest an airman's view, always

shoot your miniature scenes with the camera's lens placed as close as possible to what would be eye-level for a man reduced to the same scale as the miniature scene. This, you see, gives you a normal viewpoint on your scene. If you shoot from even slightly above this level, you'll get too much the effect of Gulliver looking down on the city of the Lilliputians. In doing this, take a tip from the model railroad builders: they don't put their railroad layouts on the floor the way Junior does, but instead build them—scenery and all—on large tables at least waist-high. You'll find this sort of platforming, where possible, will save you a lot of inconvenience you'd otherwise have, squirming around on your tummy to get the right angles!

In making miniature sets to represent a comparatively large expanse, such as a city or a battlefield, the professional conserves space by using what is called "forced perspective." In this, the objects nearest the camera are built to a comparatively large scale; those in the middle-distance, to a smaller scale, and those in the background to a still smaller scale, with a photographic or painted back-drop to complete the scene. Naturally these forced perspective miniatures have to be planned and built with particular care, and a knack that comes more from experience than from any arbitrary rules. But properly done, a miniature of this type can give an amazing impression of depth.

Lighting can also help in creating this illusion of depth. Speaking generally, a cross-lighting or a front-cross lighting is best. And if you can, try to contrast the alternate planes of your set by alternating planes of highlight and shadow with, for instance, the immediate foreground shadowed, and silhouetted against a more brightly illuminated plane which in turn is contrasted against a shaded plane, with a more brightly lit background. In general, you'll find it best to keep the plane in which the most significant action occurs fairly well illuminated. Keep the shadows fairly "open," and with rather soft edges. This is easy enough if you're working by artificial light; if you're working outdoors, you can do it by suspending strips of white muslin with slightly frayed edges between your set and the sun so that they cast their shadows where you want them.

Building miniatures is no job for a person who isn't a good bit more than just "handy with tools." My suggestion is to see if you can't enlist the cooperation of the model hobbyists in your community. They're already experienced in this sort of work, and many of them are organized into clubs which should, if properly approached, help you to put your miniature-building on something of a mass-production basis. Most of them are specialists, too. You'll find some specialize in building model airplanes, while others make model railroads, ships, autos, and so on. From the model rail-



readers, you can probably enlist one or two who are particularly expert in building accurately scaled model scenery, buildings, and so on. And—don't jump to the conclusion that all these model fans are of high-school and boy scout age; they're not—not by a long shot: you'll find plenty of adults—doctors, lawyers, bank-presidents and the like among them, just as you'll find them outnumbering the juniors in amateur cine-work. And they're just as patriotic, and just as eager to put their skill to work for their country, as the amateur filmers are!

However, for movie miniature purposes, you'll have to impress upon these model-builders one definite change in technique. In their hobby, a model-builder's skill is to a great extent evidenced by the amount of detail he is able to fashion into his model. Detail is an excellent thing, but too much of it can prove harmful to a movie miniature because the camera will pick it up and reveal details in the miniature-shot that it wouldn't catch in a similar shot of the real thing. This may not be consciously noticeable to the average audience, but they get it subconsciously as an intangible feeling something about the shot is somehow "phoney." Have your miniature-builder put in just about the amount of detail you'd see in the real thing at a long-shot angle. Then, if the miniature and its setting are properly scaled, and the camera-angle well chosen, you'll get on the screen just about what you want.

For photographing miniatures, a camera like the Cine-Kodak Special, with which you can focus your full-frame image on a ground-glass focusing screen, with the lens in actual photographing position, is a tremendous advantage. It gives you a much better idea of precisely what you're going to get than is possible any other way. The same can be said for one of the magazine-type cameras if equipped with one of the ground-glass focusing attachments. However, you want to be sure your magazine-camera will behave properly at 64-frame speed, without scratching the film or any sort of magazine troubles.

If you cannot use one of these cameras which permit full-frame ground-glass focusing, you should certainly make use of a focusing alignment gauge which permits you to slide the camera over so that, for lining up, the finder occupies the identical position that the lens will in shooting. Gadgets like this are commercially available for the Bell & Howell cameras, and they can be made up without too much trouble for any other type of camera. They're almost essential in serious miniature work. Otherwise, you may unexpectedly find on the screen that you've inadvertently photographed beyond the edge of your miniature area, or that you get an undesired, "give-away" reflection from the wires used to manipulate your miniature, or some other fault which can only be detected by lining up your shot from the identical viewpoint the lens will have in shooting.



A scale-model plane like this one being held by actor George Tobias would be satisfactory for 16mm. use, though a larger-scale model, about 1 inch to the foot, would be preferable.

Manipulating your miniatures is another important factor. The action cannot safely be left to chance; the better control you have over the moving parts of your miniature, the better and more convincing the results will be. Photographing miniature airplanes, for instance, don't expect to get a good shot if you merely toss your model plane through or into the scene. Don't try to use even large-scale flying models, either: in the first place, they aren't as a rule built to sufficiently accurate scale; in the second place, they'll fly too fast, and offer too little control, to give convincing results.

What the model-builder calls non-flying "display" scale models will prove best. For picture purposes, however, be sure to remove the propellor. In most shots, you can substitute a carved spinner for the "prop"; it will give the effect that the propellor is still there, but revolving too rapidly to be visible—which of course is precisely the effect we see when we look at a real plane in flight. Once in a long time we may want to reproduce in our miniature the blurry circle made by a swinging airscrew; in this case, replace the miniature's propellor with a disc of the same diameter, cut from a piece of transparent celluloid.

Support your miniature plane with fine piano-wires from above. These should be attached at the wing-tips and tail. If the plane is simply to fly level, you can fasten these supporting wires

rigidly to a little T-shaped wooden carriage which, in turn, rides on three parallel, horizontal wires overhead, preferably on rolling pulleys.

But if your plane is to dive, climb or turn, you'll want a positive means of control. In this case, instead of attaching your three supporting wires to the T-shaped carriage overhead, carry them through eyelets or pulleys to some convenient point out of the scene, and there, if you like, fasten them to another T-shaped controller.

This way, by playing out all three wires, you can make the plane lose altitude. If you pull in a bit on the single wire supporting the tail, the tail will rise, and the plane will seem to be diving. If you pull all three wires in, but pull a bit more strongly on the two wing-tip wires, the plane will rise, nosing up, and seem to be climbing. Pulling in on one wingtip wire or the other will make it bank. Do any of these as the plane moves through the set along the overhead wires, and you can make the little craft dive, climb or bank. For accurate control, of course, your miniature plane must be heavy enough to keep the supporting wires straight and taut.

Even though you use the finest piano-wire possible, it is always likely that a

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# Kodacolor Introduces Negative-Positive Color Stills

By WILLIAM STULL, A.S.C.

**N**ATURAL-COLOR photography with any ordinary camera, by means of a simplified, single-film negative-positive system, has been the goal of research scientists and practical photographers for over a century. For the last forty years we have been slowly approaching it; we have had a variety of systems by which excellent color stills and movies could be made. But color transparency systems like the old Lumiere Autochromes and today's Kodachrome, or "one-shot" still and movie cameras which make three black-and-white separation negatives which require intricate and costly subtractive printing before giving a color result, are acknowledgedly only makeshift steps on the way to that goal.

Today, that age-old dream of photographers seems on the verge of realization. The Eastman Kodak Company has introduced a new system named Kodacolor, in which a special negative film may be exposed in any rollfilm camera, developed into a color-negative, and printed on a special, color-sensitive positive emulsion, paper-based, to give full-color prints on paper with all the ease, and very nearly the economy of black-and-white! Very logically, its sponsors are first introducing it to the field of widest possible usefulness and sales—the field of amateur still photography; but it seems probable that eventually the basic principles of the process may be extended to include not only professional still photography, but to bring simplified negative-positive color cinematography to both the 16mm. commercial and the 35mm. professional fields as well.

The present Kodacolor process (which has no connection with the similarly-named and now obsolete additive cine process of a dozen years ago) is a technological offshoot of the familiar Kodachrome process. In Kodachrome, as is well known, three selectively-sensitized emulsions are coated on the film, together with appropriate separating and filtering layers. The top layer is blue-sensitive; beneath this, a yellow filter-layer and a green-sensitive emulsion; and at the bottom, a red-sensitive emulsion. The film, after exposure, is given substantially standard reversal-processing, resulting in three superimposed positive images, each of which records, though in black-and-white, one of the three primary color-components of the scene. These black-and-white silver images are then successively bleached out, and replaced with corresponding dye-images, each in its appropriate sub-

tractive color, with the result that the three, superimposed, produce a full-color picture.

When Kodachrome was originally introduced in 1935, this processing was to say the least extremely complicated, and the dyes used to form the final color-image were not always stable. But during recent years, this processing has been immensely simplified by means of what the photochemists call "coupler development." In this, chemicals mixed with the silver granules forming the emulsion react with chemicals in the developing solution and are transformed into visible dyes of the appropriate colors. As the various "couplers" to produce each primary color are each coated in the corresponding emulsion-layer, and as the color-forming action is directly proportioned to the developing reaction between the developer and the exposed silver, the result, when the silver image has been developed and then removed, is a dye-image in color, identical with the silver-image upon which it was based.

This action, in its simplest form, should be familiar to anyone who has developed still or cine negatives with such agents as the old standby, pyro, or such modern fine-grain developers as paraphenylene-diamine. In each case, a visible dye-image is produced in addition to the regular black-and-white silver image of the negative. In the case of pyro, this image is brownish; with most diamine-based fine-grain developers, it is a creamy tan.

Dr. C. E. K. Mees, A.S.C., of the Kodak Research Laboratories, explains the chemistry of "coupler development" by stating that "when a developer reacts with silver bromide and forms silver, its oxidation product as it is formed reacts with other chemical substances in the solution and forms colored compounds; that is, dyes. This is true only of certain developing agents, particularly those known as diamines. When the diamines develop silver bromide, their oxidation products formed at the same time combine with many types of chemicals which are known as "couplers," and give rise to strongly-colored dyes which are deposited in the film with the silver formed by the development of the image.

"The details of the mechanism of dye formation have not been completely established, but it is believed that the first reaction occurs between the developer and exposed silver halide to produce silver. In this reaction, the developer is oxidized to an extremely reactive intermediate product, which immediately

reacts with the coupler. This second reaction probably forms the leuco dye, from which the dye itself is generated in a subsequent oxidation step.

"The couplers are distinguished chemically by their possession of a reactive group, usually methylene. The cyan couplers are usually phenols; thus a typical compound would be chlorinated naphthol. Magenta couplers are often nitriles or pyrazolines, and the yellow couplers are typically esters, ketones or amides. The couplers may be added to the developing solution, in which case they must be of relatively low molecular weight and be soluble in the alkaline solution, or they may be incorporated in the emulsion layer. In the Fischer process (of which Kodacolor is a modification W.S.), the couplers were incorporated in the layers, each coupler in its appropriate layer, so that during development three different dyes would be produced simultaneously.

"In the present Kodachrome process, the exposed film is put through an ordinary developer to produce a silver image. Then the film is exposed through the base to a red light, which makes developable the hitherto unexposed silver bromide in the bottom (red-sensitive) layer, and this is developed with a cyan coupler, so that in the bottom layer a positive image in cyan (blue-green) dye is associated with the development of the whole of the silver bromide originally present in that layer. Next, the top side of the film is exposed to blue light and is passed into a developer containing a yellow-forming coupler. Then all the silver bromide is exhausted except that corresponding to the positive image of the middle layer, which is then developed with a coupler forming a magenta dye. There are then in the film three positive images in the appropriate colors and the whole of the silver bromide converted into silver by the two development operations which each layer has undergone. The silver is removed from all three layers, the film is fixed, washed and dried.

"It is obvious that this Kodachrome process could be used to obtain color prints. If a Kodachrome transparency is laid down on a white paper support, it will appear much too dark to make a good print, but a transparency too light and transparent to be satisfactory for viewing by transmitted light can be cemented to a white paper support and the film base removed by solvents, which leaves the color image on the paper. It is also obvious that it should be possible to coat the three sensitive layers on an opaque base, such as paper, and to process them by the Kodachrome process to get a color print, but this is a far more formidable task than would appear. The mere duplicating of a Kodachrome is not very easy. It is difficult to avoid a loss of color-saturation and a shift in color. Moreover, the thin coatings on paper give new troubles of their own, and the paper base itself introduces very considerable difficulties.

"Some years ago, the Kodak Labora-



tories worked out a modification of the Fischer process in which the couplers in the emulsion layers were not dissolved in the gelatin layer itself, but were carried in very small particles of organic materials which would protect them from the gelatin and, at the same time, protect the silver bromide from any interaction with the couplers. When development takes place, the oxidation product of the developing agent dissolves in the organic material and there reacts with the couplers, so that the dyes are formed in the small particles dispersed through the layers. This process might be known technically as the "protected coupler" process. Its success depends on the choice of suitable materials for protecting the couplers and, of course, upon the choice of suitable coupling compounds for the dyes.

"Within the last year this process has been reduced to a production basis, and a new film suitable for use in rollfilm cameras other than those already supplied with 35mm. Kodachrome has been introduced. The film is developed as a complementary negative from which prints on paper are made by the same process.

"This process, then, differs very markedly from Kodachrome, though it is essentially of similar character. The film is coated with the three necessary light-sensitive layers: the red-sensitive layer nearest the base; then the green-sensitive layer; a filter-layer; and the blue-sensitive layer. In each of the emulsion layers are suspended particles of organic compounds insoluble in water, particles so small that they can be seen only under a high-power microscope and containing the couplers required to produce the dye appropriate to each layer when they react with the oxidized developer.

"After exposure, the film is processed with a developer of which the oxidation product reacts with the three couplers, each in its own layer, and thus a dye-image is produced with the silver-image in each layer. After the silver has been removed, a negative is obtained composed of dyes, in which the image is not only negative as regards light and shade, but in which all the colors are complementary to those of the original subject. When such a negative is printed upon a paper coated with a similar set of emulsions containing protected couplers, a color print is obtained in which the colors of the original subject are reproduced.

"The prints are made by projection and are of the same width (2 $\frac{3}{4}$  inches) regardless of the size of film used. They are made on a special projection-printer adapted to enlarge the picture to a standard width and, at the same time, to maintain the proportions of the picture-shape used. The printing is done on a continuous roll of paper, which is processed through a complicated machine, after which the prints are cut up and delivered."

Kodacolor film is considerably faster than the reversal-type Kodachrome



Kodacolor negatives are negative in color-values, as well as in black-and-white values. Suppose the cowboy's shirt is yellow, the girl's blouse red, and the sky blue: in the negative the yellow shirt would be blue, the red blouse, blue-green, the sky yellow. The cowboy's tan trousers would be greenish, the face-tones blue-green. The white horse would be black, and heavy shadows, clear celluloid.

emulsions, being rated at Weston 20 or G-E 32; the base exposure for the proverbial "average subject" in bright sunlight is 1/50 second at  $f:8$  to  $f:11$ . For the present, at least, but one type of Kodacolor emulsion is available—a "daylight" type. This cannot be used with ordinary Photoflash or Photoflood globes, and the blue "daylight" photofloods and the bluish "Photoflood" filter used in making artificial-light exposures on Kodachrome film are also declared unsuitable. Artificial-light Kodacolor exposures may, however, be made by using the No. 21-B Mazda blue-bulb Photoflash lamps.

Development and printing of Kodacolor pictures is being handled exclusively by the Eastman Kodak Company, for the present, at least, in the main plant in Rochester, New York. Printing may be done at the same time the negatives are developed, on a blanket order by which all negatives suitable for printing are printed, or the developed negatives alone may be returned to the user, after which he may return for printing only such negatives as he selects. As in Kodachrome and cine reversal film the purchase price (\$1.35 to \$2.40 per 6-exposure roll, depending upon size) includes the cost of negative processing; prints are priced at 40c each, regardless of size. The Eastman officials emphasize, however, that while Kodacolor developing and printing is being handled by the company, exposed films for developing and negatives for printing must not be sent in by the individual user direct, but only through a recognized dealer or photofinisher.

The Kodak engineers and officials seem fully aware of the momentous changes in all types of photographic practice which the introduction of so revolutionary a system as this new Kodacolor process can initiate. They also realize a fact which the average practical picture-maker—professional or amateur—does not always recognize: that between the

strictly technical perfection of such a process and its commercial utilization on a widespread and varied scale, a very great many practical and commercial problems must be surmounted. To quote Dr. Mees again, "The development of inventions to the practical stage often involves far more work than the original inventions which made the development possible. The methods used in the manufacture of Kodachrome were invented long before the film itself could be placed in the hands of the user, and the application of the process to the production of prints required much further work before those prints could be made with sufficient ease and certainty. But, as each new step is taken, new possibilities come into sight and new progress can be made."

It is difficult to judge—especially under wartime conditions—what all of those possibilities may be in the case of Kodacolor. For the present, color still photography has been successfully introduced to the one field of photography for which heretofore there has been no commercially practical color process available. The demands of that field are already taxing the production capacities now available for film and processing. That the scope and usefulness of this system will be expanded eventually, seems certain. As fast as commercial considerations and national conditions permit, it would seem as though we might well see this, or a similar negative-positive color-system, extended to serve the more professional fields of still photography, to meet the increasing needs of 16mm. commercial cinematography, and of course, ultimately 35mm. professional color-cinematography. When those further developments may take place, none of us can tell; but it seems certain that with the introduction of simplified negative-positive color photography through Kodacolor, we stand at the opening chapter of one of the most significant developments in the hundred-year old history of photography. END.



**W**E hate to drag out that old Chinese chestnut about, "One picture is worth ten thousand words," but it is particularly apropos here, and provides a swell opening gun in any argument concerning pictures vs. words. It might also be said that the drawing-pen is mightier than the sword. In any case, no one can doubt the power of pictures, whether drawn or photographed, over words as a means of conveying a message, influencing opinion or explaining something.

In the issue at hand here, we are concerned with the usage of pictures to explain something. To be specific, the use of small thumbnail sketches to supplement a script, to indicate cuts, camera-angles and moves, and general action. However, before getting too deep into this discussion, it might be pointed out that the ideas and suggestions contained herein are directed primarily toward the amateur movie-maker, and are issuing from an amateur m.m. who offers them not with shouts of "Eureka!", but humbly and earnestly, in the hope that some good might come of them.

Of course if any of our professional



17. Andy pours Homer a drink.



18. Jete friendly, Homer responds cautiously.



19. MCU Andy, with evil grin, pulls out gun.



20. CU Juggler at what he sees.



21. Juggler at work.



22. MCU Andy, with evil grin, pulls out gun.



20. CU Juggler



21. CU Andy drawing bead.



22. Bartender makes big take!



23. Two-shot, Bart's sa runs in, makes 19 Andy put gun away.



24. Andy grudgingly gives in.



25. Turns to Homer, they toss off another drink.



26. Bandit takes careful aim - fires.



27. Detective hit in left arm. Stumbles forward.



28. Bandit, certain he sa got detect., starts to back away slowly.



29. c.u.-two-shot. Det. looks at arm grimly, cursing.



30. Bandit hit in sa head, drops gun.



31. Bandit falls backward and over edge of cliff.



32. CU - Detective fires



33. Bandit hit in sa head, drops gun.



34. Bandit hit in sa head, drops gun.



35. Unshot of cliff. Bandit falls over toward camera.



36. Bandit hit in sa head, drops gun.



37. Fan slowly back up cliff. Detect. and Homer come into view, look down. Hold and FADE OUT.

## Streamline Your Scenario With A Pictureized Script

By CARL FALLBERG

brethren wish to cast curious eyes in this direction to see what's going on in the world of the amateur motion picture creator, they're more than welcome to join in this cinema clamor.

The use of sketches and drawings to explain script action is nothing new in the professional ranks. Art-directors on the better pictures use them constantly. Directors like Gregory La Cava and John Huston plot out a great deal of the action of their scripts by means of sketches. Gordon Wiles, an ex-art director, used sketches to very good advantage in preparing and directing "Forced Landing," as he described some months ago in THE AMERICAN CINEMATOGRAPHER. Whenever a picture has gone through pre-production preparation of this sort, you'll generally find a better-looking film—one with greater pictorial value and consistency.

The value of this procedure is not only from an aesthetic sense, but also from the more practical standpoint of economy. The extra thought that goes into the planning of a script for production by means of sketches pays dividends by lessening the necessity for protection shots, retakes and added scenes.

This economical appeal of the sketch method should elicit response from the amateur, whose film budget is usually pretty limited. Making a scenario pic-

ture with amateur actors, he's lucky if he can hold his shooting down to three times as much footage as will appear in the finished picture. And aside from uncertainty, the costs aren't exactly hazy these days!

Of course, there are always those who shoot one take of a scene and let it go at that. Any conscientious care in script-planning is wasted on such shooting methods, just as a 35mm. quickie production with an eight-day shooting schedule would hardly warrant the extra time, and thought necessary to sketch up a script. The director generally reads the script through a couple of times, then throws it away and goes out and shoots. Emphasis is placed on speed, not quality of production.

There probably are isolated geniuses among amateur film-makers who can cut and edit their picture as they go along, relying on some fine, freak instinct to keep the film coherent. But they are exceptions, not rules. Better be safe than a genius, especially when you can't be sure that you really are one.

Since the amateur is usually his own writer, producer and director, he must necessarily be a jack-of-all-trades even to the extent of building sets and

doubling in brass as a juicer, costume designer and script girl. All the more reason why, with all this stuff to keep on his mind, careful planning should enter into preparing his picture for production.

Our amateur movie-maker shouldn't be visualized as a loose-lipped dope who happens to own a movie outfit and who goes around shooting everything in sight just because he likes the little whirring sound in his camera. Just out of curiosity, let's see how Mr. Webster defines an amateur; "... one who has a taste for the arts especially the fine arts ... who cultivates any art from taste or attachment, without pursuing it professionally!" Stick out your chests, boys. Doesn't say anything about "crude" or "unskilled," does it. So let's proceed on the basis of having a taste for the fine arts.

The script of your picture should be looked upon as a blueprint for the production; a chart, a guide-

book to keep your wandering feet on the narrow path of cinema consistency. There is no reason why the script should not be given the same amount of care and thought in its planning that an architect gives his blueprints or a cartographer his maps. Motion pictures are no different from any other form of endeavor in the sense that the more careful the planning, the better the result.

This doesn't mean to tie yourself down absolutely ironclad to what's down on paper when shooting starts. A picture should be in a fairly flexible state of creation all during production—within limits. Even such a tangible article as a building is subject to a certain amount of compromise with new and better ideas that sprang up during construction. But

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# 16mm Sound Projection For Defense Film Shows

By ART LLOYD, A.S.C.

**A**S individual amateurs and clubs all over the country volunteer to help the War Effort by showing 16mm. Defense Films, the question of projection takes on a new importance. Even though they're on 16mm. film, and possibly projected by amateur projectionists, these pictures have a man-sized job to do. They've an urgently important message to bring to their audiences, and any amateurishness in the way they're projected will weaken the effect of that message proportionately.

Most, if not all, of these Defense Films are going to be 16mm. sound-films. And while most amateurs serious enough to volunteer for this sort of work may be presumed to be pretty good projectionists as far as silent 16mm. and 8mm. films are concerned, sound-on-film is likely to be new territory to many of them who have never before had reason to operate a sound projector.

Luckily, operating a modern 16mm. sound-film projector isn't half as intricate as it might seem on first inspection. Even though the sound part of the outfit may be new and unfamiliar, the picture part should be an old friend. The picture-projecting section of any 16mm. sound-film projector is almost always virtually identical with—or at least very similar to—the same manufacturer's more familiar silent projectors. It is threaded, operated and cared for in the same way you'd handle a silent projector.

The sound synchronized with any individual picture frame is printed on the edge of the film some 25 frames ahead of the picture. That is, below the picture-aperture when you're threading the machine. As far as the lower driving-sprocket, the machine is usually threaded just as you would thread any silent projector. Then the film makes a fairly taut loop around the sound-drum where the sound pick-up is made. From there it passes, in most designs, over a third driving-sprocket which isn't usually found in silent projectors, and from thence—often over various idling rollers—to the take-up reel.

Now one of the most important factors in getting good sound is making sure that the film moves really smoothly at the point where the sound pick-up is made. That's why in most designs the sound-scanning drum is either attached to a fairly heavy flywheel, or is heavy enough in itself to act as a flywheel. The drum is not driven by the projector's mechanism, but is revolved by the film passing over it; therefore it resists any uneven movement in the film, and tends to keep the film moving smoothly. For

this reason, while the film's loop around the sound-drum mustn't be such a tight fit it would tear the sprockets, it also shouldn't be too loose.

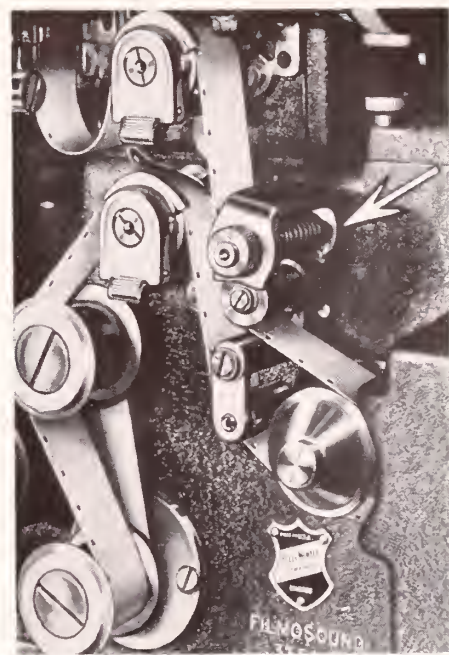
But this alone isn't always enough to iron out the minor irregularities of motion given to the film by the teeth of the driving sprockets above and below the sound-aperture as they engage and leave the perforations. For this reason, most designs provide some additional mechanism intended to smooth the film's travel to the last touch of perfection. Sometimes this mechanism may be rather intricate and hard to thread, like the somewhat perplexing system of rollers in the Eastman Sound Kodascope Special, through which the film must thread a snake-like path. Sometimes it is a comparatively simple system of idling rollers, like the "oscillatory stabilizer" on recent Bell & Howell Filmosounds, in which if the film-loop slacks up on one side of the sound-aperture, the stabilizer oscillates and automatically tightens on the other side of the loop.

Most 16mm. sound projectors have instructions—complete with a threading diagram—prominently printed inside their blimps or carrying-cases. A few minutes spent reading these instructions, and studying the diagram before you try to thread the machine will save you plenty of trouble and maybe broken film during the show!

Most of the manufacturers, too, have simplified the wiring connections so that their machines can hardly be connected any way but the right one. In most 16mm. sound projectors, you'll find that current has to be supplied to two separate places—the projector-mechanism itself, and the sound system and its amplifier. In some designs, these two power-feed cables are entirely separate. In others, like the Bell & Howell models, a special cable is used, which plugs into the power-supply outlet as a single line, and at the other end divides into two lines, one for the projector and the other for the amplifier. Usually, it is unimportant which of these leads goes into which unit, as both are designed to operate on current of the same voltage and frequency. But be sure *both* lines are plugged in if you want to run sound!

In some projectors, the amplifier is built directly into the base or the blimp-case of the projector, and sound pick-up and amplifier are permanently connected. In other designs, the amplifier is a separate unit, and must be connected to the projector by a short cable.

In all projectors, naturally, the loud-speaker (or speakers) is separate from



Sound-projectors differ from familiar silent ones only from the take-up driving sprocket down. Arrow points to stabilizer which smooths film-motion over sound-scanning drum. Beyond is sound driving sprocket, from which film passes to take-up reel.

the projector and amplifier, as it has to be placed "down front" by the screen. There's a special cable for this, too, usually 50 feet or more in length.

In most designs, it is impossible to connect the sound wiring wrongly: the line from the projection-head to the amplifier is fitted with one type of terminals, and that from the amplifier to the speaker has a very different type. These are usually of the six-wire variety, and in both cases, they're designed so that they can only be plugged in the right way, so that the right wires connect to the right terminals. As in a radio-tube mounting, one of the prongs is just slightly larger than the others, and won't fit into any connection except the proper one, which brings all the lines into their correct relationship.

Many of the larger 16mm. sound-film outfits are equipped with amplifiers made to handle two projectors. In such equipments, you'll find a clearly-marked place to plug in projector No. 1, and a similar place to plug in Projector No. 2, and a switch on the amplifier's control-panel that permits changing over from one projector to the other without any break in the sound. Many of them have, too, suitable inputs and controls so that you can use the system's amplifier and speakers with a microphone, as a Public Address system, or with a phonograph turntable. In some, you can "mix" film-sound, discs and microphone.

The controls of a sound-film projector shouldn't be any mystery to anyone who has a modern radio. You'll find an "off-and-on" main switch, a volume control, and one—sometimes two—tone controls. Use them just as you'd use the corresponding controls on your radio. In some designs, you'll find the tone-control marked with indications such as "voice" and "music." These obviously indicate

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# Trials of Making A SCENARIO PRODUCTION

By FRANCES LEITCH



**M**AKING an amateur movie with one's friends for the actors often turns out to be a drama in itself. Due to limitations in properties as well as acting ability many interesting points arise. In our case, rehearsals, retakes, and the actual shooting proved tiresome to the participants, and the director had to use all his powers of diplomacy and persuasion to keep the bottom from falling out of the whole undertaking.

Friends who were ordinarily of a sweet and amiable disposition became waspish after a day on location. The leading lady felt that by bullying she could have retakes made of all the scenes where she did not show up to best advantage. Since she owned the camera and her husband operated it, she generally succeeded in having her way. The leading man was not exactly the tall, dark, handsome cowboy that the script called for, but since he owned three horses, a pair of chaps, and two six-shooters, he got the role. The value of these important properties could not be overlooked, for this was to be a western thriller; and we were depending upon the horses and the scenery to make up for the "ham" acting. We had a good, fast-moving story and we expected the expert riding, gun-play and authentic backgrounds to carry the picture through to success.

The second most important male role, of course, was that of the villain. The man with two horses got this part. We had to explain to him that in reality the success of the picture depended upon his convincing portrayal of the base seducer and plotter of dark deeds. He was to be killed in the end, shot from his horse at full gallop, and the execution of this maneuver required real equestrian skill.

We found it wise never to tell too much of the story to the members of the cast, but rather to explain each scene just as we were about to shoot it. Otherwise, those with unsympathetic roles became dissatisfied and wanted their villainy glamorized.

The minor characters could generally be counted on to perform their parts well and without much display of temperament. However, they were self-conscious and succumbed to ill-timed fits of laughter just as the camera started to grind. The director would soothe and flatter them into a state of self-confidence, clear the set of onlookers, and make a retake of the ruined scene.

Neighbors and friends are usually

eager to have a hand in the making of a movie. We even found it advisable to manufacture a few minor roles not in the script to pass out to a friend who felt slighted, or to a neighbor on whose property we were trespassing.

One of the greatest difficulties in making a movie with one's friends as actors was to get them all together at one time in one spot. They were willing and enthusiastic for the first few occasions, but then their families started making demands on them: "Do you have to spend every Sunday making that picture? I should think you'd spend some time with your own wife for a change." On such a Sunday as this we would have to "shoot around" the leading man although we were definitely set to make his big rescue-scene that day!

We finally decided to give the leading man's wife a role in the movie in order to gain her cooperation. She was pleased at first and happy to be included, but she became a still greater problem now that she was on the set watching her husband in the final love-scene with the heroine. To keep peace among the players we struck the love-scene from the script and ended the picture on a purely platonic note. This proved to be a wise move, because love-scenes in an amateur picture generally turn pretty sour.

The leading actors became hard to handle as our picture progressed. The director unwittingly allowed them to see some of the rushes, and complimented them lavishly on their performance—an almost fatal mistake. The actors began to sense their importance; and the poor, distracted director had to apply all the pressure he could muster to force them into line again and make them obey his orders.

Of course, there was that ray of sunshine that entered when things looked blackest—the young Mexican boy who, with only a brief rehearsal, stepped into his part and played it with an ease and naturalness that gave reality to the whole picture.

Our movie was only half finished when the shooting was done, for then the ambitious cameraman-director had to sit down to the tedious and laborious task of editing the film. This meant cutting and splicing, condensing scenes to quicken action, adding transitional bits to make the action smoother, inserting titles, and finally paring the film to the bone—until there was nothing left.

(Continued on Page 133)



# KNOW YOUR SHUTTER!

By RAY FERNSTROM, A.S.C.

WITH amateur groups pooling their equipment and resources for greater efficiency in turning out Civil Defense films, it is to be expected that from time to time the amateur Directors of Photography on these films are going to find themselves using unfamiliar cameras. Often enough, the best cameraman in an amateur group doesn't own the best camera; maybe his own is an eight instead of a sixteen, or maybe it isn't built to operate at the necessary 24-frames-per-second sound speed that's necessary for these films. So using a borrowed outfit is clearly indicated.

And brother, any time you start shooting something important with an unfamiliar camera, you're likely to be headed straight for trouble! Oh I know you've made yourself familiar with the external gadgets on the thing. You know how the lenses and their turret operate. You understand the speed-control and realize the release-button is in an unfamiliar place. You know how to operate the backwind and fade (if any), and you're cinematographer enough to savvy that if the finder is in a different position from the finder on your own camera, you'll have to figure finder-parallax differently.

But there's one little gadget inside the camera I'll bet you've forgotten. If you have, it can cause you more concentrated grief and embarrassment than anything else on the camera!

It's the shutter.

Never gave it a thought, did you? Figured that all cameras had to have shutters to cut off the light while the film is moved from one frame to the next, and that since that's the case, all shutters must be alike?

Brother, that's just where you're most awfully wrong! The basic principles of all cine-camera shutters may be pretty much the same—but in detail, they can be plenty different. So can the results they give. If you don't respect these differences, they can change you from a first-class cinefilmer to a dub in the time it takes to shoot and process a single roll of film.

Let's see, now. The shutter on a movie camera has the job of blacking out the light that comes through the lens during the interval while the film is moved from one frame to the next, doesn't it? It has to be thin, so it can fit into the comparatively small space available between the film and the back of even a wide-angle lens. This means it must operate in a space maybe six or eight millimeters wide.

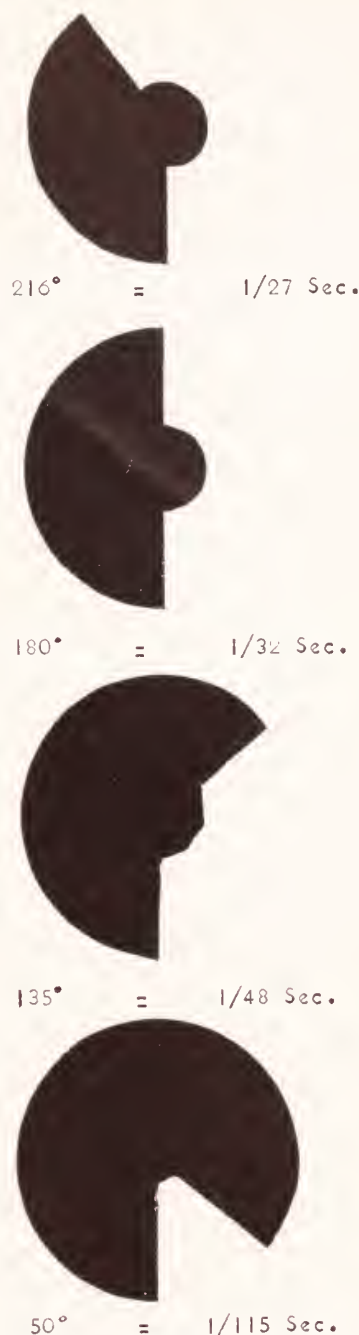
Obviously, the simplest form of con-

struction is a rotary shutter; that is, a disc of metal with a segment shaped like a piece of pie cut out of it, which revolves just in front of the film, and parallel to the film. Now, that open segment—which we call the shutter aperture—can be a comparatively thin slice nipped out of the disc, or it can be a fat slice.

If it's a comparatively thin segment, the shutter will naturally be open, exposing the film, for a relatively short period. If it's a fat slice, the shutter will be open longer, giving a longer exposure. And here's a point to remember: *not all cine-cameras—even those made by the same manufacturer—have the same shutter-opening.* Quite a number of different factors of design enter into this, but the fact remains that different cameras may very probably have different shutter-apertures.

Reduced to practical terms, this means that under otherwise identical conditions, two different 16mm. cameras may give you considerably different exposures: Suppose, for example, you're accustomed to using a Bell & Howell Filmo 70 camera. This has a shutter-opening of 204°, and at 16-frame speed, gives an exposure of 1/28th second; at 24-frame sound speed, 1/45th second. Now say you change to an Eastman camera—any model, including the Cine-Special. These cameras have a shutter-opening of only 170°, so you'll get an exposure of 1/32 second at 16-frame speed, and 1/51st second at sound speed.

Now, talking on a strictly silent-film basis, with everything shot at 16-frame speed, you'd probably find the exposure-difference between 1/28th second and 1/32 second within the latitude of black-and-white film processed (like Eastman's) with an automatic photocell-controlled machine which tends to equalize exposures. You'd probably find the difference troublesome in Kodachrome, with its narrower latitude, or in a monochrome shot where exposure was a critical factor. But when you add this to the problems incident in shifting from the 16-frame speed most amateurs use to the 24-frame speed any serious film such as a Defense Film has to be shot at, you find yourself going from an accustomed exposure of 1/28th second to 1/51st second—in other words, you very nearly cut your exposure in half. That's more than likely to turn what you intended to be a normal exposure into an underexposure, for it means if you take your meter-reading as you usually would, get an *f*:8 reading, and set your lens accordingly, your shutter and camera-speed differences are actually giving you only an *f*:11 exposure!



Shutter-apertures and their equivalents in exposure-time, at silent-picture speed of 16 frames per second.

This becomes even more complicated if you change from a Filmo 70 (or a Victor which, with its 205° shutter, gives virtually the same exposure) to a magazine-type Filmo Autoload or Automaster, which has a 135° shutter. In this case, you've got to allow for the change from 1/28th second to 1/45 second if both cameras are used at silent speed, or from 1/28th second to 1/65th second if the change is from one camera to the other and from silent-speed to sound-speed as well. (You might ask the Editor of this magazine what happened to him a few years ago when he shot a lot of color scenes with a borrowed camera of this type on an air trip for which his specially-rebuilt 70-C Filmo was too bulky, and forgot that little

(Continued on Page 132)

# LET YOUR FAVORITE SONG SUGGEST YOUR NEXT SCENARIO

By F. C. MOULTRIE

**W**HETHER the reader of this article has participated in an amateur photoplay production before, or whether he may now be contemplating it for the first time, the writer would like to make a suggestion which he considers will be of value in providing an interesting source of material for preparing one's "shooting scripts." It is often a tiresome process to try and answer the question "What story shall we film?" and it is sometimes difficult to find a theme that will "fill the bill"—particularly if one's film is to be comparatively short, that is, not much in excess of four hundred feet.

Therefore, the suggestion is that you do not overlook the possibilities to be found in the immense fund of poems and songs. In many instances, choice of a song as one's basis also provides, quite automatically, the musical score with which to accompany presentation of the film. In choosing a suitable song and having used one's best imaginative effort in writing the shooting script, this and other songs of similar theme may be used for scoring the musical accompaniment for the various parts of your film. Furthermore, any one of these songs may again be written up as a photoplay if you wish, thus providing a series, all of a type.

Songs usually possess some basic theme or story, which may be enlarged upon by exercising imagination, the resultant photoplay then becoming an elaborate movie "illustration" of the song in question.

As an example of experimentation along this line and in order to present you with one such adaptation "ready made," there appears hereunder a script which I wrote some years ago, founded on the song "The Old Oaken Bucket." Notations appear in the margin as to the recommended musical scoring for accompanying the presentation at the point noted and I might add that, although some costuming will be required for this particular script, this need be neither extensive nor too expensive. It is pointed out, too, that this story would appear particularly well in full color, if well carried out. Since it is almost entirely an outdoor setting, great fun and interest could be derived from undertaking its production during fine weather.

The writer would be exceedingly interested to hear, through the Editor, of any groups who may undertake to make

this photoplay and of their subsequent results.

THE OLD OAKEN BUCKET  
ADAPTED (FROM THE WELL  
KNOWN SONG) BY  
F. C. MOULTRIE.

Suggested musical score—Old Oaken Bucket.

MAIN TITLE:  
"THE OLD OAKEN BUCKET"  
LAP DISSOLVE TO

Subtitle No. 2: (Superimposed upon background of suitable design.)

"How dear to this heart are the scenes of my Childhood,  
When Fond Recollection presents them to view!

The Orchard, the meadow, the deep,  
tangled wildwood,  
And every loved spot which my Infancy knew!"

DISSOLVE TO

Medium Shot No. 1: Old couple seated by fireplace. Old lady knitting. Old man has been reading. Sits thinking and removes specs. from nose while fumbling for handkerchief. Blows nose, then wipes mist from specs. Wife looks up from knitting and enquires what he is thinking of. With suitable gestures and expression he tells of his thoughts of bygone years. Music: "When you and I were young, Maggie."

DISSOLVE TO

Subtitle No. 3: (Superimposed on background of suitable design)

"The wide-spreading pond and the Mill that stood by it,  
The Bridge and the Rock where the Cataract fell,  
The Cot of my father and the Dairy-house nigh it,  
And e'en the rude bucket that hung in the well!

Music: "Old Mill Stream," "Oaken Bucket."

DISSOLVE TO

Medium Shot No. 2, (Continuation of shot No. 1): Old folks continue talking and then lapse into silent reminiscence as they slowly shake their heads from side to side.

Continuation previous music.

FADE OUT AND INTO

Medium Shot No. 3: Little red school-house. Children pour out of door. Running towards camera. One boy pauses, close-up panting, then continues forward and off.

Music: "School Days."

CUT TO

Medium Close Shot No. 4: Little girl,



on way home. Has school books, also has doll under one arm. (If possible to arrange, truck alongside with camera part way.) Bully accosts little girl and tries to snatch away doll. Another little boy (one seen in previous close-up) arrives and rescues little girl, fighting and licking the bully. Politely escorts little girl off scene.

Same tune.

CUT TO

Medium Close Shot No. 5: Arrival at little girl's gate. She smilingly bids him good-bye and he politely doffs his hat. He watches her disappear indoors and then heaves a "love-struck" sigh ere, with a pensive smile he slowly walks away.

Same tune.

FADE OUT

Medium Shot No. 6 (Same as shot No. 1): Old folks have reached foregoing point in their reminiscences and the old man, in a short glimpse, lovingly looking at the old lady (as separate, short, close-up if thought best) Man smiles pensively and speaks—

Music: "Old Oaken Bucket."

CUT TO

Subtitle No. 3: "I remember —"

FADE INTO

Medium Shot No. 7: Interior. The old farm-house. Mother, in old-fashioned dress and very matronly, sends our hero off to draw water. She hands vessel to youngster and he departs.

Same tune.

CUT TO

Medium Shot No. 8: Outside farmhouse.

Lad, closing door after him and making off to draw water.  
"Old Oaken Bucket."

CUT TO

Medium Shot No. 9: The old well. Circular low stone wall with winch en-

(Continued on Page 127)



# AMONG THE MOVIE CLUBS

## Rockford to Hear Color Expert

Scheduled to highlight the March 31st meeting of the Rockford (Ill.) Movie Makers is a special talk on color photography by Eastman's ranking color-expert, Harris B. Tuttle. He will explain and demonstrate both still and movie photography in color, including Kodachrome, Minicolor prints and the new Kodacolor negative-positive color-still process. All camera fans in the Rockford area are invited to attend this meeting, which, like all the Club's gatherings, will be held at the Hotel Faust.

ROBERT L. JACOBS.

## L. A. 8's See Professional Kodachrome

The February meeting of the Los Angeles 8mm. Club featured a surprise showing of a reel of 16mm. Kodachrome tests made by the Twentieth Century-Fox Studio in testing makeups, costumes and the like and selecting locations for professional productions. Photographed by such outstanding professionals as Ernest Palmer, A.S.C., Charles Clarke, A.S.C., and Leon Shamroy, A.S.C., the reel showed glimpses of such stars as Carmen Miranda, Betty Grable, Tyrone Power, and Carol Landis, and revealed what 16mm. Kodachrome can do in the hands of a skilled professional. The reel was brought by Honorary Member Bill Stull, Editor of THE AMERICAN CINEMATOGRAPHER. The regular program included showings of a number of the entries from the Club's recent Annual Contest.

GERTRUDE MILLAR, Secretary.

## Minneapolis Previews 8's


Scheduled highlight for the February meeting of the Minneapolis Cine Club was a preview of the 8mm. films for the Club's forthcoming 8mm. show, completely titled, edited and ready for the Club's big public showing. Another highlight is the Cine Kiddie-Quiz, an informal quiz-program which has proven popular (not altogether on account of the prizes put up for correct answers to the questions!)

ROME A. RIEBETH.

## Washington Sees Commandos

Britain's famed Commandos, as shown by the Castle 16mm. war-newsreel release "British Commandos in Action," was the highlight of the February meeting of the Washington (D. C.) Society of Amateur Cinematographers. Editing and Editing equipment were discussed by Albert B. Hill, and a movie-quiz program was conducted by Theodore Sarchen. Members were invited to bring their pet 35mm. Kodachrome slides

"Better Movies Through Knowledge"



8 m. m. **MOVIE MAKERS** 16 m. m.

SYRACUSE  
ASSOCIATION

Syracuse, New York

100 Trinity Place.  
Syracuse, New York.  
February 16, 1942.

The Editor,  
The American Cinematographer,  
1768 North Orange Drive,  
Hollywood (Los Angeles), Calif.

Dear Sir:


I have just finished reading your article on the formation of a National Association of Movie Clubs.

We of the Syracuse Movie Maker's Association, wish to say that "we are all for the idea," and will cooperate with you or the parties involved to the fullest of our ability, in securing such an organization. We fully realize the importance of such an organization.

During the past months our organization has been showing both sound (Synchronized sound on disc, and track) and silent films to shot-ins, civic organizations, etc. in addition the service of the Association has been volunteered to the local Civic Defense Council and Red Cross organizations.

In regard to films for interclub exchange, we have two: "Henry's Hobby," and "The Haunted School." The first film was completely acted, written, produced, and processed by the "negative-positive" method by members of the association themselves. The second film was processed by Eastman by the reversal method. Any clubs wishing to view these films may do so by merely writing Mr. LeRoy Felton, Sec'y., 142 Coolidge Ave., Syracuse, New York, who will make the necessary arrangements for shipping.

"Better Movies Through Knowledge"



8 m. m. **MOVIE MAKERS** 16 m. m.

SYRACUSE  
ASSOCIATION

Syracuse, New York

2-

Again we wish to express our appreciation to you for helping along and promoting the idea of a National Association of Movie Clubs. Anything that we can do to help the idea along will be very gladly done.

May we hear more from you about this?

Very truly yours,  
*Lyle Conway*  
Lyle Conway, President,  
Syracuse Movie Maker's Assn.

P. S.

For any interested movie maker's that might be passing through Syracuse, New York in the future, they are always welcome to attend our meetings which are held at 336 West Onondaga Street, (Plumber's Hall), Syracuse, New York, every second and fourth Mondays in the month at 8:00 P.M.

**INTER-CLUB COOPERATION:** The Syracuse Movie Makers Association was the first to respond to the suggestion, made here last month, of developing a National Association of Amateur Movie Clubs. Syracuse has films, fellowship and full cooperation "on the line" at the start. How about it, the rest of you club officers?

(limit, 10 per member) for screening. Special 16mm. films were also to be shown.

JOHN T. CHEDESTER, President.

## Outdoor Films for S. F.

The program arranged for the February meeting of the Cinema Club of San Francisco by Chairman Anthony Kleyn went "all-out" for outdoor epics. Guest of the evening was F. W. Macondray, who was to show a 16mm. Kodachrome sound-film "Campfire Girls." Secretary Lawrence Duggan volunteered to show two of his 8mm. Kodachrome films with sound-on-disc accompaniment, "Virginia City Excursion" and "Snow Bunnies." Chairman Kleyn showed his 16mm. Kodachrome film of the Livermore Rodeo. The Technical part of the meeting included a general discussion of exposure.

E. L. SARGEANT, President.

## Sound for Metropolitan

Scheduled for the February meeting of New York's Metropolitan Motion Picture Club was Ralph Eno's "New York World's Fair," filmed in Kodachrome and scored with recorded music. "Tele-mark," a 400-foot monochrome film by Graham McKelvey of Easton, Pa., and a repeat performance of "Wolf Bait" completed the performance.

J. F. HOLLYWOOD.

## Utah Amateur Club

Feature of the February meeting of the Utah Amateur Movie Club (Salt

Lake) was a showing of "Northwest Trails," by Dr. S. Kenneth Robbins. Plans are completed for the March meeting, at which the new season's officers will be installed, and winners of the Club's Annual Contest will be shown.

TED GUERTS, Secretary.

## St. Paul Elects

February meeting of the St. Paul Amateur Movie Makers Club drafted the following to serve as officers for the coming year: President, Howard L. Hanson; Vice-President, Harold Smith; Secretary-Treasurer, Mrs. S. L. Johnson. Programme Chairmen will be Messrs. Lucius and Finn, assisted by Kenneth Hezzlewood. Scheduled screen fare included the film made of the Club by William S. Yale, postponed from the January meeting due to a last-minute slip-up; and "Northern Vacation," Kodachromed in Northern Minnesota and Canada's Lake of the Woods area by D. B. Gustafson.

## Philly's Three Best Honored

At the February meeting of the Philadelphia Cinema Club selection was made by ballot of the three best movie films shown throughout the year. From among the forty films shown during the season first prize was awarded to Boyd T. Barnard for his 16mm. color picture "Sagebrush and Saddles" showing life at a dude ranch, and depicting the anguish of the first horseback ride, and the excitement of the rodeo.

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the scale between high-key scenes of polished luxury in the home and studio of the Hollywood director, to drably documentary scenes in the slums, where the hero goes on his search for trouble, sombrely effective scenes in the convict-camp where he finally overtakes genuine affliction, and a comedy chase which is pure Mack Sennett.

In doing this, John Seitz, A.S.C., gives a real virtuoso performance. The average audience won't be consciously aware of the photography, but camera and lighting very subtly play their part in establishing and maintaining the emotional conviction of the widely-divergent locales, lending fine atmospheric values to each. At the same time, he makes the players appear to the best possible advantage—no small task in some sequences, where Joel McCrea and Veronica Lake bespread themselves liberally with grime as they journey through hobo "jungles" and slums.

The film owes a great deal to the efforts of Farciot Edouart, A.S.C., and his staff for the excellent transparency projection process-work which makes the scenes on moving trains, and especially the close shots in the bus "chase" sequence so convincing.

### Defense Film Ready

"AIR RAID WARDEN," the first 16 millimeter civilian defense training film produced on the Pacific Coast, will be released by Photo & Sound, Inc., San Francisco.

The film will be distributed nationally to civilian defense councils, air raid warden groups, industrial firms, city and county governments, and schools.

"AIR RAID WARDEN" is a sound film, running 10 minutes, showing the duties of the air raid warden in preparing his neighbors for action under possible air attack, and also shows his duties during a blackout.

Photo & Sound, Inc., San Francisco, produced the film in cooperation with the Office of Information of the San Francisco Civilian Defense Council, City officials of Berkeley, Shell Oil Company, Pacific Gas & Electric Company and W. and J. Sloane.

Also under production in San Francisco is another 10-minute defense training film, "BLACKOUT" scheduled for release, March 1.

In addition to producing defense training films, Photo & Sound is handling distribution of all civilian defense films available.

**16  
MM**

**BUSINESS  
MOVIES**

### THE CASE HISTORY OF LUCY X

Propaganda film on work of Tuberculosis Associations; 800 feet Kodachrome, narrative sound.

Produced by Capital Film Service.

This picture tells a story in silent-

picture scenario form, supplemented by offstage narration, of a typical case from the films of a typical Tuberculosis Association. As such, it has an interesting message, and one which it brings home most effectively.

Technically, the film is excellent. The continuity is good—complete, though perhaps a bit slow-moving—and the medical aspects are well brought out without resorting to clinical scenes which might render the film unsuitable for general showing.

The major part of the action takes place in a sanatorium, necessitating a great deal of interior lighting. This is handled quite capably. As might be expected, some of the crucial action takes place during the night watches, and the effect-lightings of these sequences are dramatically excellent, though in one or two instances—as in the close shot of the two nurses in their office—the effect might have been better had the foreground shadows been lightened up a little. The long-shot of the doctor going down the long hospital corridor to the bedside of his patient is a particularly authentic night-effect lighting.

The uncredited cinematographer in charge of making this picture has also attempted something you don't often see in a commercial film—keying his lighting to the emotional mood of the action. During the early part of the picture, where the patient, "Lucy X," is seriously ill and desperate, he keeps his lighting in a low key; but as her recovery sets in, and she develops a will to get well, he raises his key to a more normally cheerful effect. In general it is well done, though in the higher-keyed sequences his exposure seems a trifle on the full side, and in the low-key sequences it seems almost on the verge of underexposure. However, considering the limited latitude of Kodachrome, and the variables introduced by the duping process, he rates real praise for this attempt. His handling of the X-ray sequence is particularly good, by the way.

We felt that the definition of this film was not altogether the best, a flaw which could have occurred in the original photography, or in the duping process, as well. It would seem worthwhile for commercial Kodachrome filmers, wherever possible, to equip themselves with about 500 feet of heavy cable, so that they could make a clamp-connection at the main fuse-box, and draw safely enough current so that they could over-light their scenes sufficiently to permit photographing their interiors at comparatively small apertures, to get every possible advantage of depth and definition.

As regards the narration of this film—or of many another film of this general type—it somehow seems to us that we've never yet seen a commercial film-producer who got the maximum effect possible from offstage narrative. The narration of this film is excellent, of its kind—but we wonder if it is necessarily the best kind. Such films as "The River," "The Power and the Land," and more recently, "Bomber," have been exten-

sively shown. And while it is a manifest impossibility for the 16mm. commercial producer to get a Carl Sandburg narrative on the average 16mm. commercial budget, still, a careful study of these outstanding documentaries should give some worthwhile hints as to what can be added to a factual film by the properly dramatic use of words. After all, a film like "The Case History of Lucy X" is every bit as much a documentary as "Bomber;" so why should it be handicapped by a dry, pedantic narration, written without feeling and spoken in coldly factual tones, when the whole message of the picture is emotional?

### FORWARD MARCH

Direct consumer sales-film; 400 feet black-and-white, narrative sound; picture and sound 35mm. reduction.

Produced by Caterpillar Tractor Company.

Recording by Chicago Film Laboratory (RCA 35mm.)

We held this film over for several additional screenings in order that we might more carefully analyze its appeal and handling. It is an excellent picture, but one aimed not at the general audience, but at the highly specialized audience of men whose work is contracting on earth-moving construction jobs. Due to this highly specialized purpose, "Forward March" has been made one of the fastest-moving commercial films we've seen. From start to finish it hammers away at its motive—the speed and economy of Caterpillar equipment for big jobs of earth-moving. From the viewpoint of its intended audience, it tells its story excellently; but from the layman's viewpoint, it moves almost too swiftly. Things which to the contractor are matters of course, it sketches over briefly; yet the layman (including this reviewer) would have enjoyed seeing many of them explained in greater detail.

From the technical viewpoint, "Forward March" is excellent. Photographed obviously at innumerable different times and places, under a wide variety of conditions, it is technically very creditable. The scenes are nearly all technically excellent, though here and there a scene or two seemed to have been photographed at infinity focus when the salient action occurred at a considerably closer point. For its purpose, the use of black-and-white is probably adequate, but we'll admit we personally missed the greater authenticity color would give, especially in separating the equipment shown from its dusty background.

The recording (35mm. RCA) was good, but to our way of thinking, in no way superior to an equally competent job of direct-16mm. sound.

### RAILROADIN'

General publicity film on railroad transportation; 1200 feet Kodachrome, narrative sound (35mm. reduction RCA.)

Dunningcolor Kodachrome print.

Produced by Advertifilms, Hollywood.



Sponsored by American Locomotive Co. and General Electric Co.

Attempting to cover in three reels the vast subject of the American Railroads' place in modern life, and at the same time play no favorites among the country's several-score Class A haulers is a large and thankless task. Due to this, "Railroadin'" moves rather faster than it might, and skips swiftly over much interesting subject-material which could very well be shown in greater detail. As a matter of fact, it contains enough material for two or three separate pictures.

Aside from this, the film does its work excellently. Technically, it is surprisingly good, especially when it is considered that the filming required only a few weeks, and includes shots on virtually every mainline railroad in the nation, with at least one shot of each of the nation's crack trains. This required the cinematographers to work, often almost regardless of weather conditions, and to shoot according to train-schedules rather than for the best photographic conditions. They've done an excellent job throughout.

The film is interesting in the way it combines strictly factual shots of trains and special railroad equipment with staged "human-interest" scenes. In some of these, Director Jack Boland has managed very skillfully to use the power of the camera to suggest as well as reveal.

The recording is excellent. Originally a 35mm. RCA variable-area recording, it was re-recorded to 35mm. variable-density, and then printed by reduction to 16mm. Kodachrome. The color duping by Dunningcolor is also excellent, especially in view of the diverse conditions under which the original was performed shot.

## Movie Clubs

(Continued from Page 125)

Second prize went to Mr. and Mrs. Frank Hirst for their 8mm. color film on "Glacier National Park." In addition to musical accompaniment Mr. Hirst described and narrated on points of interest.

George Pitman, Vice-President of the Club received third award for his 16mm. color picture "Over Western Trails" accompanied by music and sound effects.

In addition five honorable mentions were made of the following films shown throughout the year:

"Backyard Beauty," by Herbert L. Tindall; "Bar Harbor," by Walter Gray; "Pennsylvania Scenes," by Wm. W. Chambers; "Great Smokies," by Robert Crowther; "Flowers," by C. Murray Booth.

Miss Laura Lee, feature writer for the Philadelphia Evening Bulletin accompanied by a staff photographer attended this meeting and gave some very much appreciated publicity to the Club through a fine write-up. To aid in giving color to the pictures which accom-

panied her story, members of the Club staged a scenario night-club scene.

Refreshments were served to all attending the meeting.

## Long Beach Sees Defense Films

The February 4th meeting of the Long Beach Cinema Club was shown an 800-foot film of Kodachrome with sound, entitled "Shenandoah Valley National Park" and "Luray Caverns," through the courtesy of "Home Movies." There was also shown a traffic film through the courtesy of the Long Beach Traffic Safety Council. February 18th, Miss Stewart from Los Angeles showed 400 feet of news reel features in sound including "Women in Defense"—"Safeguarding Military Defense"—"The Bombing of Pearl Harbor" and also one of her own pictures taken during a Canadian trip.

Art Hoffman conducted the opening session of the "College of Movie Knowledge." A novel feature of a "Slogan a Month" was suggested by Clarence Aldrich. This month's prize slogan was won by Mrs. Pat Smith—For credit edit—

If you want credit,  
Take time to edit.

PRUDENCE BRAKLOW, Secretary.

## Scenario from Song

(Continued from Page 124)

closed by "roof" above, also with foliage suitably arranged above. Boy approaches and sets down pail. Proceeds to turn crank. The "Old Oaken Bucket" is hoisted up, full of clear water. Lad withdraws same and places on ground. Pulls frog from pocket. Same tune.

CUT TO

Close-up Shot No. 10: Boy squats by bucket. Drops frog in water and watches it swim. Looks very preoccupied.

Same tune.

CUT TO

Medium Shot No. 11: Interior Farm-house. Mother impatient for water. "Where IS that boy?" Goes to door and snatches it open crossly.

CUT TO

Medium Shot No. 12: Outside same door. Mother glancing around seeking lad. Spies him and peremptorily beckons and calls. Strides forward with determination.

Same, or other suitable music.

CUT

Shot No. 13: Same scene as shot 9. Mother enters scene while boy still watching frog in bucket. She shakes him and scolds. Makes him empty bucket and draw clean water then melts, hugs and kisses him.

FADE OUT TO

Medium Shot No. 14: Same lad, with other boys, seen fishing where sign states "NO FISHING HERE." Wag of party jokes about it and, motioning

to others to "wait a minute," he sets to work with a jack-knife to scrape off some of the lettering so that it reads "NO FISH IN HERE." They all laugh and continue to fish.irate owner appears and warns boys off, and, pointing at sign without looking at it himself says—

Music: "Old Mill Stream."

CUT TO

Subtitle No. 4: "Can't you boys read?"

CUT TO

Medium Shot No. 15: Irate man sees sign, scratches head then looks at boys while good natured smile comes over his face and he slaps knee and laughs at the joke upon himself.

Music: "Old Mill Stream."

FADE OUT TO

Close-up Shot No. 16: Circus announcement.

Music: Suitable Calliope Circus Music.

CUT TO

Medium Shot No. 17: Same as above. Our "fishing trio" arrive. Scanning the circus announcements they indicate lack of entrance fees by pulling out pocket linings, after emptying varied assortments of bugs, string, etc.

Music: "Old Mill Stream," "Old Oaken Bucket."

CUT TO

Subtitle No. 5: "Never mind, fellas,—snitch a look."

FADE OUT TO

Medium Shot No. 18: Our friends seen on circus grounds beside walls of Big-Top. Stealthily glancing around, they crawl under. Upheavals of the tent flap seem to indicate great enjoyment. (Or could be shown under or beside tiers of seats, showing cautious enjoyment.) Big circus hand comes along and hoists them out by their pants and sends them ruefully away.

Calliope circus music suitable to type.

FADE OUT TO

Subtitle No. 6: "Later."

FADE OUT TO

Medium Shot No. 19: Boy now grown to young man. Walks up garden path with sweetheart, he in his best swallow-tail coat and cravat with tall beaver hat and she in crinolines and bonnet.

Music: "When You and I Were Young, Maggie."

CUT TO

Medium Close-up Shot No. 20: The old well. Apple blossoms above. The lovers arrive and sit upon brim. He draws her a cool drink in the "Old Oaken Bucket." They play at drinking from it, one on either side.

Music: "Old Oaken Bucket."

CUT TO

Closeup Shot No. 21: Same scene. Two seen as they look up from drinking and face each other, laughing over top of the old bucket.

Same tune, or "Daisy, Daisy" (or latter to follow).

FAST FADE OUT

Medium Shot No. 22: Mother, now grown



older, outside farmhouse door, stands awaiting young couple. They arrive on scene and mother welcomes them. They all enter homestead together.

FADE OUT

Subtitle No. 7: "It seems but yesterday  
——"

FADE INTO

Music: "Tell Me That You Love Me."  
Closeup Shot No. 23: Angle shot of lovers silhouetted against suitable background.

Effects recording of tolling bell.

DISSOLVE INTO

Close Shot No. 24: Bell tolling in open church steeple.

DISSOLVE TO

Medium Shot No. 25: Horse and buggy decked out in ribbons. Fellows and girls in various wedding scenes. (This may be prolonged to take in various shots of bridesmaids, festivities, old fashioned wedding presents, couple leaving church, etc., as desired.)

Music: "Here Comes the Bride."

SLOWLY FADE OUT

Medium Shot No. 26: Back to shot 1. Old couple with tears in their eyes but lovers ever, still tenderly caressing.

Music: "Tell Me That you Love Me," or "Silver Threads Among the Gold."

DISSOLVE TO

Title No. 8: Old oaken bucket, against dark background, or evening clouds, with rope attached. Superimposed words appear, reading "The Old Oaken Bucket, the Iron-bound Bucket, the Moss-covered Bucket That Hung in the Well."

Music: "Old Oaken Bucket."

SLOW FADE OUT.  
THE END.

## Academy Awards

(Continued from Page 103)

screen approximately twice the amount of light of previously used systems.

The fourth of these awards was given jointly to Paramount Pictures and 20th Century-Fox for the development and the first practical application to motion picture production of an automatic scene-slating device. The fifth of these citations was given jointly to Douglas Shearer, A.S.C., and the Metro-Goldwyn-Mayer Sound Department and to Loren Ryder and the Paramount Studio Sound Department for pioneering the development of fine-grain emulsions for variable density original sound-recording in studio production.

For the first time in Academy history documentary films were singled out for special recognition, a special citation being issued to "Churchill's Island," produced by the Canadian National Film Board and released in this country by United Artists.

Several Special Awards were made in addition to the usual ones. In addition to the citation given Rey Scott's "Ku Kan," already mentioned, such Special Awards were given to the British Minis-

try of Information for making "Target For Tonight;" to Walt Disney, William Garity, John N. A. Hawkins and RCA for their outstanding contributions to the advancement of the use of sound in motion pictures through the production of "Fantasia;" and to Leopold Stokowski and his associates for their unique achievement in the creation of a new form of visualized music in Walt Disney's production "Fantasia."

The keynote of the entire banquet at which these Awards were tendered—the first such affair to be held in wartime—was serious appreciation of the vast and many-sided task the motion picture industry has to accomplish in modern war, maintaining morale along the "home front," providing instructional films to speed the training of the military services, and finally recording the actual operations of those forces in the field. It was evidenced in the remarks of virtually every speaker, including the report made by Lt.-Col. Darryl Zanuck on the activities of the Research Council in making Army Training Films, the address of the evening by Wendell Willkie, the remarks of such other speakers as the Chinese Ambassador, Dr. Huh Shih, and the Canadian National Film Commissioner, John Grierson, and very liberal sprinkling of uniforms, worn not alone by official representatives of the U. S. Army, Navy and Marine Corps, but by members of the industry who have placed their specialized skills at the service of their country. The Academy Awards Banquet is traditionally the highlight of the film year; but this time it seemed to mark a new birth for the industry and its people—dedicating every effort to Victory. END.

## Professional Sixteen

(Continued from Page 111)

early in the development of theatrical film production, it was not until 1923 that agreement was reached as to the size of film for a "substandard" film. In the middle "teens" Pathe brought out a 28mm. film and projector, and in 1922 Bell and Howell designed and built a 17½mm. camera and projector resembling the present-day 16mm. Filmo.

At that time, the Eastman Kodak Co. was designing a new camera and projector and was planning to announce a new reversal emulsion for amateur filming in 16mm. width. By mutual agreement, Bell and Howell altered the design of their 17½mm. camera to accommodate Eastman's new 16mm. film and in the spring of 1923 a new medium of film production was born.

An 11mm. film, a 9.5mm. film and finally an 8mm. film were also introduced and used. At one time a 70mm. double-width film was used in the so-called "Grandeur" system but none of the above sizes withstood the test of time in this country except 35mm., 16mm. and 8mm.

In the spring of 1923, things began to happen fast in the 16mm. field. First,

Eastman Kodak announced their 16mm. reversal film, the Model A hand-cranked 16mm. camera and the corresponding Kodascope Model A projector. Then Victor announced a 16mm. camera at about 1/3 the price of Eastman's camera. The Victor camera was also hand cranked and although Eastman made a spring-drive and even a battery-powered electric drive as accessories to their Model A, Bell and Howell was the first company to make an "automatic" spring-driven 16mm. camera. It is a tribute to their original Filmo design to point out that the 35mm. Eyemo was designed according to Filmo principles and that no changes in basic design have been made in 19 years. It is true that Bell and Howell have modified the Filmo to make it more useful to the serious amateur and the professional by adding the three-lens turret, single-frame crank and back-wind, sync motor drive, 400-foot magazines, focusing on ground-glass, and improvements in their viewfinder, etc., but essentially the present day Filmo is very similar to the first model made in 1923.

In the years that followed, other manufacturers added improvements and introduced new models for special purposes such as the simplified magazine-type cameras. It remained for Eastman Kodak to design and manufacture the first commercially available 16mm. silent camera for advanced amateur and professional use. By coincidence, this camera was announced in May, 1933—just ten years after their introduction of 16mm. reversal film and the original Model A camera and projector.

At about this same time, Eric Berndt was making a custom-built single system Sound Camera which was the forerunner of the Berndt-Maurer Sound-Pro Camera. Although both Bell and Howell and the Mitchell Camera Co. have experimented with professional 16mm. cameras with many of the features of their 35mm. counterparts, the first and at present only thoroughly professional 16mm. camera was marketed by the Berndt-Maurer Corp. of New York. This organization was also responsible for introducing the first 16mm. sound recorder for double-system recording.

Thus, with professional camera and sound-recording equipment available, the tools for professional production in 16mm. were beginning to take shape. The first ten years of 16mm.'s brief existence might well be called the "Amateur" period in 16mm.'s development, but the beginning of the second decade saw 16mm. production taking on professional stature. Improvements in 16mm. production equipment and methods are still going on, so that it is not fantastic to hazard a guess that 16mm. may some day compete with 35mm. as a medium of production even for theatrical films.

16mm. film was originally introduced as an inexpensive film for amateur home movies. However when 8mm. films, cameras and projectors were made available in 1932, the cost of amateur filming was so greatly reduced by using 8mm.



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20th Century-Fox

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Director of Photography

JOSEPH LA SHELLE  
Operative Cameraman

PAUL LOCKWOOD  
Assistant Cameraman

*Color Photography*

### **"BLOOD AND SAND"**

20th Century-Fox

*For 20th Century-Fox*

ERNEST PALMER, ASC  
Director of Photography

DON ANDERSON  
Operative Cameraman

ROBERT MCGOWAN  
Assistant Cameraman

*for Technicolor*

RAY RENNAHAN, ASC  
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FOURTEENTH ANNUAL AWARDS OF MERIT BY THE  
ACADEMY OF MOTION PICTURE ARTS AND SCIENCES

## Defense Filming Roll-Call

We want to thank our readers—not only amateurs but 16mm. professionals as well—for their already generous response to this Defense Filming Roll-Call as published last month. Replies have been coming in daily, from all parts of the country. However, the need still exists, so we repeat the call for the benefit of those who have not yet sent their answer in. Since many readers wrote that they dislike to mutilate their magazines, we print this on a page where there is no editorial text on the reverse side, and add that a letter containing the same information will also serve. We want especially to hear from owners of 16mm. sound-projectors, as one important Defense Agency has informed us it is urgently in need of such equipment and aid.

### A. Camera Equipment

1. 16mm? \_\_\_\_\_ 8mm? \_\_\_\_\_
2. Make and Model of Camera? \_\_\_\_\_
3. Camera-speeds? \_\_\_\_\_
4. Lenses \_\_\_\_\_
5. Recording Equipment? \_\_\_\_\_ Film? \_\_\_\_\_ Disc? \_\_\_\_\_
6. Tripods \_\_\_\_\_ Meters \_\_\_\_\_
7. Lighting Equipment \_\_\_\_\_

### B. Projection Equipment

1. 16mm? \_\_\_\_\_ 8mm? \_\_\_\_\_
2. Make and Model of Projector \_\_\_\_\_
3. Reel capacity \_\_\_\_\_ Lamp Wattage \_\_\_\_\_
4. Silent? \_\_\_\_\_ Sound? \_\_\_\_\_
5. Size and Type of Screen(s) \_\_\_\_\_

### C. Experience

1. Amateur? \_\_\_\_\_ 16mm. Professional? \_\_\_\_\_
2. How long have you been making movies? \_\_\_\_\_
3. Have You Made any Sound Films? \_\_\_\_\_
4. Are you accustomed to interior lighting? \_\_\_\_\_
5. Can You Operate Sound Projectors? \_\_\_\_\_
6. How much film do you shoot per year? \_\_\_\_\_ B&W? \_\_\_\_\_ Color? \_\_\_\_\_
7. Do you specialize in any type of subject? \_\_\_\_\_
8. Have you made business, commercial or educational pictures? \_\_\_\_\_
9. Individual or Club scenario productions? \_\_\_\_\_
10. Cine-Club Membership? \_\_\_\_\_ What Club? \_\_\_\_\_

### D. Personal Information

1. How much time could you give? \_\_\_\_\_
2. Could you give it on an unpaid, volunteer basis? \_\_\_\_\_
3. Could you aid in making films? \_\_\_\_\_ Showing them? \_\_\_\_\_
4. Age? \_\_\_\_\_ Any Physical disabilities? \_\_\_\_\_
5. Are you subject to Military Service? \_\_\_\_\_
6. Married? \_\_\_\_\_ Single? \_\_\_\_\_
- Signature: \_\_\_\_\_
- Street address: \_\_\_\_\_
- City \_\_\_\_\_ State \_\_\_\_\_

film that many amateurs changed over to 8mm. and many more new amateurs took to making "movie snapshots" in 8mm. The result of these changes has been that 8mm. has become the popular "standard" of the amateur home-movie fan, while 16mm. has become the medium for advanced amateur and non-theatrical professional use.

From the beginning of 16mm. project-

ors, it was considered desirable to make optical reduction prints on 16mm. positive film from 35mm. negatives. For several years, equipment has been available which gives excellent 16mm. optical reduction prints of both 35mm. picture-negatives and 35mm. sound-negatives. The user of 16mm. projection-equipment is not concerned with whether the positive he uses in his machine was printed

by reduction from 35mm. originals or by contact from 16mm. originals, and so in discussing the uses of 16mm., we generally shall not distinguish between the two methods of arriving at a 16mm. print.

Amateur users of 16mm. film are confined largely to the photographing of vacations, family events and athletic contests with an occasional scenario film still somewhat an exception. Amateur use of 16mm. cameras in producing "school-made" films with crews of student technicians is becoming increasingly important in training students to assume responsibility and to coordinate their activities to a common purpose. Many theatrical and educational films are available in 16mm. for amateur projection in the home, churches and schools at a small rental.

Professional uses of 16mm. films are almost limitless in their variety of applications. Many travel lecturers illustrate their talks with 16mm. Kodachrome films of their travels. In some cases, these lecturers use 16mm. arc light projectors to show their films to large audiences of hundreds or even thousands of people who generally are not aware that the brilliant and colorful images they are seeing originated in a 16mm. film designed for amateur home movies in the living room.

Prominent physicians use 16mm. film to record unusual operations which might be of value in adding to the fund of medical knowledge. By making a film record of an operation, the details of surgical methods can be shown in extreme close-ups to large classes of students, perhaps years after the operation took place. Further details of the operation are frequently revealed in 16mm. color animations of action which cannot otherwise be seen.

College and University Athletic departments are making 16mm. film records of every play in their football games, usually in slow-motion up to 48 or 64 frames per second. Other sports are analyzed in a similar way by slow-motion 16mm. films. Physical skills are taught in 16mm. educational films using slow-motion for form analysis.

16mm. educational films are available as teaching aids for all levels of instruction from kindergarden through University in such widely diversified subjects as "Adventures of Bunny Rabbit"\* for Kindergarden and primary children and "Work of the Stock Exchange"\*\*\* for high-school and college study of Economics. These 16mm. educational films are not theatrical films which have had their run in theater-circuits, but are films which are made specifically for classroom use in instruction and generally are designed to fit into a "unit of instruction" at a particular grade level. They are custom-built for the classroom and use all of the refinements of 35mm. theatrical film productions.

\* Erpi Classroom Films, Inc.

\*\* Coronet Productions.



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WAR requirements have sharply curtailed the supply of metal and plastics needed to manufacture 35-mm. motion-picture film cans and cores. Consequently, the Eastman Kodak Company urges the prompt return of these essential supplies. They must be used over and over again.

Help maintain the supply of motion-picture film by seeing to it that all Eastman cans and cores are kept in good condition, collected, and shipped to the Kodak Park Works, Rochester, N. Y.

By doing your part in this emergency, you help yourself and everyone connected with the motion-picture industry—as well as all those who depend more than ever on the screen for vital information and entertainment.

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Business and Industry have been quick to realize the power of presenting their institutional sales messages, their direct selling campaigns and their sales organization programs by means of 16mm. sound films. Within their organizations, they have used the 16mm. film to train personnel in more efficient and safer methods of production. Films have found extensive use in time and motion study for efficiency analysis, in training salesmen, in presenting a new sales policy to a dealer organization, to introduce new models and equipment to both dealers and the public.

With the advent of 16mm. Kodachrome and Kodachrome duplicates and the possibility of enlarging the 16mm. Kodachrome to 35mm. Technicolor, the business uses of color films are expanding rapidly. The 16mm. sound-film in color is without doubt the most powerful medium available today to present a sales story, and many business organizations will make extensive use of color-films in the future.

The many branches of the Federal and State Governments have made extensive use of 16mm. prints in "selling" the public on their functions and problems. Recently the armed forces have built their whole training program around the use of 16mm. prints of training films produced by Hollywood studios at cost and by the various units of the Army and Navy.

Within the past year the Hollywood studios have turned to 16mm. film as an economical means of making hairdress, wardrobe and make-up tests, screen and talent tests and scouting locations.

Some studios are already producing short-subjects on 16mm. original Kodachrome and enlarging it to 35mm. Technicolor for theatrical release. Several Newsreel theaters have installed 16mm. Arc projectors and are running 16mm. films regularly. The quality of both picture and sound is such that few if any of the patrons even know that they are seeing a 16mm. film. Thus in many different fields of endeavor, 16mm. film productions are taking their rightful place on a par with 35mm. productions and in the case of color films, 16mm. productions have a definite preference.

## Wartime Economies

(Continued from Page 110)

tor will almost instinctively seize on such scenes as a means of increasing "production value," and all too often almost the entire restaurant is built. Yet in many cases, the really necessary action could be performed equally well by simply setting up a table before a pair of flats, with a few appropriate props in foreground and background to suggest the locale. In the majority of instances the dramatic values of the production would not in the least be harmed, and a tremendous saving of material, time, effort and money would result. If

reverse-angles on such scenes were needed, what could be easier than to provide this by means of a process-screen on which would be projected a suitable stock-shot of a roomfull of people dining and dancing?

Another source of needless expense is the way screen writers will often use fairly important transitional dialogue and action as the characters walk down a hall, pass through an office or lobby, enter a car, etc., in a setting which does not otherwise figure in the story. While that dialogue and action may be important to the story, nine times out of ten it does not matter particularly in what setting it occurs. The cinematographer's instinctive reaction is to ask why, if the setting is not important, that dialogue can't be transferred to some other location, thereby eliminating the necessity of building a basically unnecessary set.

There are innumerable other potential economies of this nature which could and would be effected if the Director of Photography could be called into active consultation before script, sets and schedule had jelled into iron-clad rigidity. Do not imagine, however, that taking this type of short-cuts would damage the quality or production value of a picture. With the visualizing ability of a skilled cinematographer aiding actively in pre-production planning, such short-cuts as might be taken would be effected with a view toward the camera's great—and all too generally unutilized—power of suggestion. Often, as Gregg Toland, A.S.C., demonstrated repeatedly in "Citizen Kane," small and actually sketchy sets—planned accurately for the camera—can give an illusion of greater production value than can be conveyed by an actually large and costly set.

Finally, in considering the merits of this "pre-photographing" of scripts and production plans, remember that eliminating unnecessary sets, scenes and camera-moves from a script can have the effect of giving longer time for photographing the scenes actually used. Would not such a practice, then, be worthwhile if by camera-minded pre-production planning, it eliminated non-essential shooting and for a given schedule gave the production unit the equivalent of several more hours of effective work per working day? END.

## Know Your Shutter!

(Continued from Page 123)

matter of shutter-aperture differences. They say his face was a lovely Technicolor-red when he saw his underexposed "rushes!")

Luckily, this question of shutter apertures can be turned to useful account, as well. For example, if you're going to be working under circumstances where getting enough exposure is a problem, you can get a little added advantage by switching from your 170°-shuttered camera to one with a wider opening like the Filmos or Victors already mentioned, or even one of the older 70-A or 70-C



Filmos which have a 216° shutter.

If you're using a camera like the Cine-Special, which has an adjustable shutter, you can make your shutter work for you very constructively, much as the professionals do with the adjustable shutters on their Mitchells. For example, you can "follow focus" on exposure with your shutter. Often, in making exteriors, we'll have to make a panning shot from action taking place in the shade out to action occurring in the bright sunlight. The difference in exposure may be a matter of several stops. One way to compensate for this is of course to close down your lens-opening as you pan from the shade into the sun, or open it, if you pan in the opposite direction. But this also changes your definition, depth of field, and contrast, so it isn't always so desirable.

But you can get exactly the same effect, so far as exposure is concerned, if instead of stopping down your lens as your light-value changes, you close down your shutter, instead. And doing it this way, optical quality, depth and contrast remain unchanged.

Another trick the professionals sometimes use is changing camera-speeds in the middle of a shot. For example, suppose we have a shot of some people getting into a car and driving off in a special hurry. We want the car to make a real jackrabbit start. But starting a car off like that isn't always so easy; besides, it's likely to burn a good deal of rubber off your tires, which is something to think about these days.

We can get the same result by shooting that part of the scene in which the actors get into the car at normal speed, and then, as the car starts, quickly dropping the camera's speed to half or two-thirds normal. Inevitably, this would make quite a difference in exposure. So we compensate it by cutting the shutter-aperture at the same time the camera-speed is reduced, keeping the exposure-timing the same throughout the shot. Professionals using electric motor-driven cameras have worked out some interesting mechanical gadgets by which motor-speed and shutter-opening may be changed simultaneously; but before Dwight Warren, A.S.C., doped out this gadget, they did it by hand—and so can you. Maybe you'll need an extra pair of hands or an assistant to help you do it, but you can do it surprisingly well just the same!

Another point where understanding of your shutter helps is in photographing fast-moving objects. If you're shooting some fast-moving object with a still-camera, and want to "stop" the motion so you get a sharp picture, you use a shorter exposure. The same thing works just as well with a movie-camera, for by cutting the shutter-opening, you give yourself a faster exposure. However, there are some peculiarities to this that are worth remembering. It's best to do this when your camera is "following" the moving object, rather than when the moving object is travelling across

your frame laterally. You see, if your subject is moving and the camera isn't, cutting the shutter may shrapen up the individual frame-images of the moving object, but it will also space the exposures farther apart, so that there's greater displacement between that object's position in successive frames, with the result that you get a jerky, flickery effect on the screen. If, on the other hand, your camera is "following" the moving subject, shooting with a reduced shutter-aperture will give you a sharper image, since in the shorter exposure period even the fastest-moving parts will move less across the film during the shorter exposure.

All told, don't you think it's a pretty

good idea to get acquainted with your shutter—especially if you're going to be making a Defense Film with somebody else's camera? END.

## Scenario Troubles

(Continued from Page 122)

ing left but what was absolutely necessary to the smooth continuity of the story.

Though the work was hard and the trials great, the achievement compensated for our efforts. With much good fortune we now had a picture not only pleasurable to ourselves, but entertain-

# Outstanding Achievements in Cinematography



ARTHUR MILLER, A.S.C.  
for "How Green Was My Valley"

ERNEST PALMER, A.S.C. and  
RAY RENNAHAN, A.S.C.  
for "Blood and Sand"

Today, the facilities of the Bardwell & McAlister organization are being devoted to the production of materials essential to the Nation's War Effort. But this does not mean we have forgotten our friends who are carrying on with the almost equally essential task of making motion pictures to serve the "home front." We proudly salute these Cinematographers who have been awarded their profession's highest honors, and together we look forward to the day when, with Victory won, Bardwell & McAlister studio lighting equipment may once more be available to our friends in the studios.

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ing to the public at large. The hard work and disappointment are forgotten when we view with pride the finished product. After a long rest we should like to try making another movie. END.

## Sound Projection

(Continued from Page 121)

the settings at which voice and music reproduce to the best general effect: the "voice" setting means that the tone is set fairly high, with the bass suppressed, as that setting gives the highest intelligibility. The "music" setting usually means that the bass is accentuated, since most people prefer their recorded music with plenty of "oomph." If possible, it's a good idea to run all or part of your picture through beforehand, as a rehearsal, so you can find what settings give the best results from a given film on a given machine. Don't be afraid to change your tone-control setting during the show, using the high or "voice" setting for dialog or narrated sequences, and the "music" or low setting for sequences which are silent with only, or largely, musical accompaniment. You'd better rehearse for your volume setting, if possible, too, since it is very difficult to judge volume accurately when you're right on top of the projector. Try and gauge your volume for the middle of your auditorium. Remember, by the way, that you'll need a bit more volume when the auditorium is full than when it's empty, as people's bodies absorb quite a

bit of sound. If you can't rehearse, keep the volume setting just a bit below the one that sounds best to you when you're close to the projector.

On some of the best 16mm. sound-film machines you'll find an additional setting on the sound-scanning optical system of the projector itself. Sometimes this is labelled "Fidelity." Sometimes it isn't labelled, but you can spot it as a little lever on the lens of the sound-scanner, or (as in the Eastman Sound Special) as a little sliding button nearby. This setting changes the focus of the sound-pickup beam, to compensate for the position of the emulsion, as it may be toward or away from the lens. This is very important if you want to get the best quality out of your sound; an out-of-focus sound-pickup will give poor-quality music, and makes voices sound "fuzzy." Try your film with the sound-focus in both positions, and you can very easily hear which gives the best results with that particular print.

Setting up the sound-projector doesn't differ materially from setting up for silent projection. The projector should be back of your audience if possible, and a bit above their heads. It should be on a pretty rigid foundation, too. The screen should be well centered with the projector, with its bottom edge at least four and a half feet from the floor. If you have any chance of suiting the size of your screen to the size of auditorium and audience, it's a good, general rule to try to have the screen large enough so that when you stand in the middle of the auditorium and hold your clenched fist in front of you at arm's length, the screen, as you look at it with one eye, seems not quite twice the width of the fist. In any event, don't try to use a screen larger than your projector will illuminate satisfactorily with the particular film you're going to run.

While it's generally handier to place your loudspeaker or loudspeakers on the floor beside the screen, you'll get the best results if you can place the speaker above the screen—over the heads of the audience—with the axis of the speaker's cone aimed downward at about the center of the auditorium.

Most serious amateurs have already learned the value of turning the projector's mechanism a turn or two by hand, to make sure the film is feeding through properly. This is doubly important with a sound-projector. It's a good idea, after you've done this, to flip the motor-switch on for a second, as well, to make sure everything's all right. Some machines, like the Sound Kodascope Special, have a little button you can press to do this. If your film is a reduction from a 35mm. original, it's quite likely to have the "Academy standard" leader on it, which gives you several feet of leader-film with which to make sure your projector is properly threaded.

In starting a silent projector, many amateurs make it a practice to flip the motor-switch first, and then turn on the projection-lamp. This is just as good an

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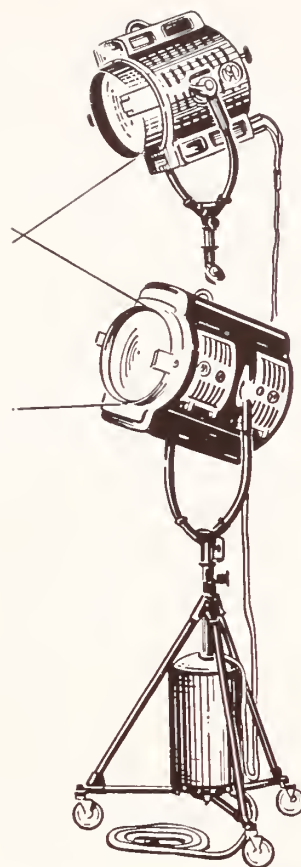
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idea in projecting sound. However, remember that your amplifier gets its results with tubes just like those in a radio, and these tubes usually take a minute or so to warm up. So be sure and switch on your amplifier several minutes before you're ready to start projecting. If you don't, your show will begin embarrassingly silent—and suddenly the sound will come booming out unexpectedly!

If you've had any experience projecting silent films before audiences, you've probably learned (from sad experience!) that it's always a good policy to come provided with a spare lamp bulb, just in case the one you're using burns out. This holds true for sound-projection, too; in fact, if you're going to be giving Defense Film shows in strange auditoriums, it isn't a bad idea at all to come equipped with a variety of lamp-bulbs, so that you suit your illumination to the needs of the situation, using a low-powered globe in a small room, where you can get only a small picture, and a higher-powered globe—or even a "10-hour" one—where you've got to throw an extra-big picture or use a poorly surfaced screen.

In addition, don't forget the sound mechanism depends on several types of globes which can burn out, too. If you can, have some spare tubes. But at any event, supply yourself with a spare exciter-lamp. This is the tiny bulb which casts a little pencil of light across the sound-track and enables the photocell to pick up the sound. It is also one of the

shortest-lived components of a sound projector. A spare exciter-lamp is a "must" if you're planning serious showings! A spare photocell is another useful thing to tuck away in your kit. You don't often need one—but when you do, well, your sound is dead until there's a "live" photocell in its place in the machine!

Finally, remember the points which make *any* show—silent or sound—more professional. Get your outfit set up, threaded, and completely ready to go *before* your audience arrives, if you can possibly do it. If you've more than one reel to show, use two projectors if possible, so you can change over in professional style, and keep the show going without a break. And always save your rewinding until after the show's completely over! **END.**

### Pictureized Scripts

(Continued from Page 120)

the architect and contractor knew pretty well beforehand what the final result was to look like, and had this planned so thoroughly that whatever changes might pop up wouldn't affect the basic plan, but simply supplement what was already there.

Much can be said in favor of a pictureized script; very little against it. About the only disadvantage to the method is the additional time and energy it requires. But since when did a little extra work hurt anyone?

Only too often a setup or angle on a

scene is sluffed over when the script is being worked out because, "Oh, we'll work it out when we start to shoot!" Such off-the-cuff reasoning only leads to wasted film and time. Even though camera directions are indicated in the typewritten script, there's still the problem of character size, directions and angles to be considered. Deciding on these factors via the sketch method makes up your mind for you before that valuable film starts jerking through the camera.

But let's skip the theorizing for a moment, and get down to some examples. Illustrating this article are some thumbnail sketches lifted from the script of an amateur 16mm. western the writer and some friends made. In this case, a typewritten synopsis of the picture was developed at first, with suggestions for cutting. But instead of going ahead with shooting from this point, another step was taken and each scene-cut in the entire picture was sketched up, supplementing the typed script, in the manner illustrated. And there was the whole picture, already visualized before production. Every scene was there, with sizes of characters indicated, directions of character movements shown, and all camera moves plotted. Shooting then was just a matter of lining up the camera according to the diagramming of the pictureized script, with allowances, naturally, for the "flexible state of creation" mentioned earlier.

No artistic ability is necessary to work out these little sketches. All you

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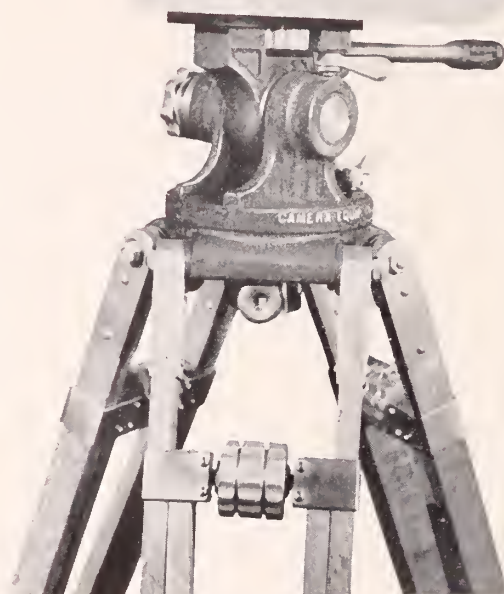
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need are those little matchstick figures that most anyone can scratch out, with circles for heads and simple ovals for bodies. If the character is a woman, slap a representation of a skirt on her. If it's a man, pants, naturally. The direction in which the character is looking can be shown without much difficulty by placing two dots for eyes on one side or the other of the circle head. The simpler, the better. After all, the sketches aren't for public consumption as works of art. They're for your own benefit. All you have to worry about is the size of characters in the field and the directions in which they move. Forget about the background; all that's needed is just what contacts a character, or a few perspective lines to indicate the camera angle.

Keep the sketches small, so you can cram a lot of them on a page of script. About 2 inches wide by 1½ inches high is a good rough proportion of the camera field. You might cut a stencil of the sketch size out of cardboard and use it to trace off the outlines of your sketches, just for the sake of size consistency, lining them up across the paper like a comic strip, allowing space underneath for scene descriptions and numbers.

Pan moves (where the camera follows a character), or the movements of characters in and out of scenes are simply shown by red arrows. If certain scenes in fairly close continuity utilize the same setup or background as a previous scene, they should be identified. For example, if scenes 67 and 69 use the same background setup as scene 62, it can be indicated by a small notation, s. a. (same as) 62 under the regular scene number. So, all three scenes can be shot on one setup without moving the camera. All this might sound like a lot is being made out of small details, but it all sums up to a more orderly and businesslike way to shoot a picture.

If there happens to be a little bit of the artist in you, a lot of fun can be had out of planning interesting compositions and "arty" camera-angles. If you're so inclined, you can even shade the sketches up an try working out lighting-effects. Mood stuff, you know.

Professional animated cartoons utilize the sketch method of production planning to the most complete degree of any part of the picture business. Drawings have been used to work up cartoon scripts ever since the days of Gertie the Dinosaur. Every scene-cut, camera move and bit of business is sketched up in careful detail, leaving nothing to the imagination or to be "worked out after the picture gets in production." Cartoon storymen have been trained to think pictorially, having found that the quickest, easiest and clearest way to present an idea is to do so graphically.

It seems to stand to reason that the most logical and natural way to prepare ideas for presentation in a visual medium like motion pictures should be by means of pictures. That long gap between the written ideas and their photographed form can be bridged by the proper use of explanatory sketches.

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Which is a worthy enough reward in itself! END.

## Miniatures

(Continued from Page 117)

glint of light from the metal may pick up in the camera. The best way of preventing this is to rub the wires thoroughly with ordinary painters' putty. This will take the sheen off the wire, dulling it down until it becomes photographically invisible.

Explosions, as of bombs, call for another specialized technique. In professional miniatures, our explosions—tiny charges of powder—are usually set off electrically, with the firing controls all wired to a convenient central switch-board, where a powder-man "plays" his explosions like an organist at his console. This elaborate firing-system isn't usually practical for amateur use, where only one or two miniature shots are necessary for a picture. However, in most cases the ordinary "giant" fire-cracker of Fourth-of-July commerce makes an excellent substitute. You can bury them in the ground of your miniature, or conceal them inside miniature buildings, and fire each "bomb" individually, stopping the camera between explosions while you prepare and light the fuse of the next charge. In this, as in any serious cinematography, a rigid tripod is absolutely mandatory, for your camera must not move a hair's breadth between these partial takes.

If you are going to have fires in your miniature, burning down miniature buildings, you can manage your miniature incendiarism quite easily. However, since you are burning your set behind you, you'll be well advised to do as the professional does in shooting a miniature fire or flood, or any other action in which his miniature set or props are inevitably destroyed, and shoot the action simultaneously with several cameras, from different angles and with different lenses, so that you get a variety of what the analytical Russians like to call "cutting pieces" at a single take. It's surprisingly good insurance, too!

Finally, since air raids and incendiary bombings are likely to be the subject of many of these films, here's a trick by which you can get a bomber's-eye-view of bombs actually falling on your own town. Begin by getting a vertical aerial still of your town. Get as large a print as you can—the bigger the better. Mount this flat on a board which you can move around on the ground. Mount the camera directly over it, pointing downward

at your still. Slightly below the camera, and held rigidly in relation to it, construct a miniature of the bomb-bay of a plane, complete with bombs and bomb-racks. As you shoot down through this frame, move the photo slowly backward, so that you get the illusion on the screen that the camera is mounted in a plane in flight over the city. At appropriate intervals, operate your miniature bomb release, so that the tiny bombs (which should be built to quite a small scale) drop down and toward the picture. As the bomb gets well on its way, cut to one of your horizontal shots of a miniature bomb explosion, and the result on the screen—as any audience will swear—will be that one sees the bomb fall away from the plane, and then sees a closer shot of the resulting explosion! Let us all hope sincerely, though, that such shots may only be made with the safe-and-sane enactment of the movie miniature, and never in cruel actuality. END.

## Tony Gaudio

(Continued from Page 112)

graphed years ago. If it's a good feature, I know how I brought it out before; if it's a bad feature, I know how I subdued it. I do something similar this time, and then maybe instead of having an uninteresting imitation Bette Davis, the industry has a new star with a personality in her own right."

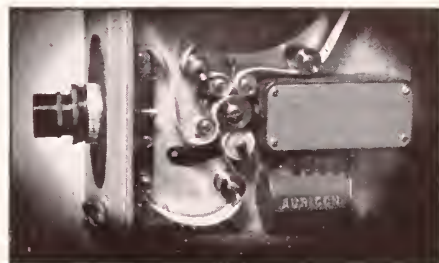
Tony Gaudio has always been one of the most consistently progressive members of the camera profession. One of the very earliest members of the A.S.C., and the Society's fourth President, he has taken an active part in all of that organization's technical researches, such as those which smoothed the introduction of panchromatic film, Mazda lighting and modern make-up. And he has always found time to work out private ideas for the advancement of cinematography, as well.

One of those inventions is in daily use today any time anyone looks through the focusing microscope of a Mitchell camera, for Tony invented it. Twenty years ago, when you focused a professional camera you viewed your image either on the film itself or on a removable ground-glass focusing screen. In either event, if you had a good camera, you probably viewed this image through a simple, low-powered magnifying-glass, which still gave you an image which was upside-down and turned around left for right as well.

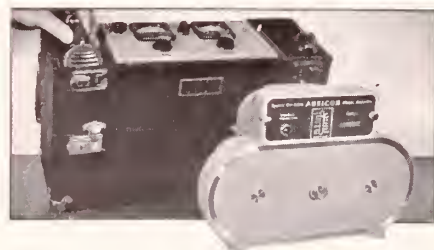
But Tony thought there ought to be a better way of lining up a shot. How much easier it would be, he felt, if you could see your image right side up and laterally correct, and also rather highly magnified! What's more, he felt that a system of lenses could be worked out which would do it. He kept after the idea, working in close collaboration with the Mitchell engineers and with the Bausch & Lomb opticians. Finally, after many months of experimentation, a fo-

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cusing optical system of that type was actually perfected. For the first time in the history of cinematography, one could look into a camera and see—magnified some 10 diameters—the actual image cast by his lens, right-side-up and laterally correct. By a turn of a small control, the vital center-area of the image could be scanned, with the magnification almost doubled. Universally employed today, this system was a revolutionary refinement in cinematography when it was introduced.

Gaudio was also among the first cinematographers to experiment successfully with the idea of photographing exterior night-scenes in the daytime, with filters. In the face of an almost universal chorus of "it can't be done," he tried it on an important production—one of many he filmed with Norma Tallmadge—and not only succeeded, but saved his producer some \$25,000 over the cost of actual night shooting!

More recently, he has pioneered such modern techniques as the use of "Dinky Inkies," and "precision lighting," using spotlights almost to the exclusion of floodlighting units. He devised one of the most practical systems known for testing character make-ups. He was one of the first cinematographers to experiment with the use of fluorescent lamps for lighting close-ups.

One sometimes hears people both within and outside the industry wonder if men like Gaudio, who have been so many years at the peak of their profession, don't sometimes tend to get into a rut, since success has removed the incentive which spurred them on their upward climb. Tony Gaudio can answer that, in his own case, at least.

"Not so many years ago," he tells you, "Tony Gaudio was the big-shot cameraman. They gave him big pictures like 'Hell's Angels.' Then the word got around that Tony Gaudio's eyes had gone back on him—and right away, Tony Gaudio became an ex-big-shot cameraman. For two years, no one in Hollywood would give him a job. Then one

day Johnny Arnold, out at MGM, gave him a picture, and right after that, Warner Brothers said they'd try him on one. And ever since then, every time I start a picture I have a little talk with myself. 'Tony,' I tell myself, 'in this business they say a man's no better than his last picture. You go in there and make this one the best picture Tony Gaudio ever photographed! You show them whether Tony Gaudio is good or not!'"

And Tony Gaudio has "showed them" with remarkable consistency. One of those pictures—"Anthony Adverse"—brought him an Academy Award for the year's best cinematography. Others—like "Juarez," "Robin Hood," and "The Letter,"—have year after year been nominees and strong contenders for the "Oscars" in both black-and-white and color. Even on program-picture assignments, he invests a picture with an indefinable touch that makes one feel he's looking at something a bit better than any program film has any right to be. No matter what the assignment, it isn't in Gaudio's make-up to "walk through" the photographing of a single scene.

Which is probably why, after nearly forty years of photography, and over a thousand pictures, the credit "Director of Photography, Tony Gaudio, A.S.C.," is a pretty certain guarantee to any camera-minded moviegoer that what he's about to see will be photographically outstanding. END.

## Scattered Light

(Continued from Page 109)

time, a further reduction is possible to—

$K (t + s/2 \sin^2 \phi)$  units.

We may also simplify matters further by dividing through by  $Kt$ , and thus reach a point where the true image illumination is considered as unity, while the scattered light has a value of  $s/2t \sin^2 \phi$  units of illumination.

In this last form, the expression will give the minimum illumination value in the shadows of our hypothetical subject, for in this case the true image illumination is so low that it may be neglected in comparison with the scattered light illumination, and the maximum tone ranges that the lens will transmit for different scatter factors and different semi-angles of lens field are readily calculated. It is clear that as the last factor (*i.e.* field angle) increases, scattered light flux in the focal plane will also rise. Even assuming, therefore, that the value of the factor  $s$  is reduced as far as possible by surface treatment of the glasses, it is still important to reduce the field angle so far as possible. In other words, a lenshood which cuts out all the subject except those points which actually fall within the negative area in the focal plane is required.

The present writer has already dealt at some length (British Journal of Photography, 1941, pp. 427-8 and 434-6) with the contrast loss which is to be

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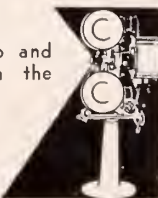
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expected for various levels of scattered-light illumination in the focal plane, and lest it be imagined that the above mathematical expression bears no relation whatever to practical photography, a description of one of the experiments involved is repeated here. A camera was set up before a large sheet of opal glass, and a step-wedge placed in the centre of the latter. The opal glass was illuminated evenly from the far side, and in order to imitate a variable field angle masks were placed over it which cut off all light other than that proceeding from circles of definite diameter. Identical exposures were made through four masks of different diameters, and a comparison exposure was made by removing the wedge from the opal, placing it in the dark-slide, and exposing on the plain background of constant brightness.

The resulting densities of the step-wedge image were plotted in the usual manner, giving the curves shown in fig. 2, and it will be seen at once that increase in mask diameter (which corresponds to an increase in field angle) results in an increase in scattered-light illumination in the focal plane. By interpolation on the contact-print curve, the maximum tone ranges which could be impressed on the emulsion for a given field angle were computed, and expressed as a percentage of the constant background brightness. The table below indicates the results.

Exposure No.	Semi-angle of lens field ( $\phi$ ).	Scattered light in focal plane as % of background brightness.	$s/2t \cdot \sin^2 \phi$ with $s/t = 4.4\%$
1.	$9^\circ$	0.56%	0.58
2.	$14^\circ$	1.00%	1.28
3.	$18\frac{1}{2}^\circ$	2.80%	2.18
4.	$24\frac{1}{2}^\circ$	4.25%	3.80

When the obvious difficulties of interpolating by the above method are taken into account, and when it is remembered that the area of the step-wedge on the opal glass has not been allowed for in the mathematics, the last two columns show a satisfactory agreement with one another. The scatter factor  $s/t$  was naturally chosen to bring the mathematical expression down to comparable values, yet the suggestion that 4.4% of the light transmitted by the lens is scattered is very much of the order one would expect to find.

It will be observed that the field covered by the lens even in exposure 4 is by no means a large one (just under  $50^\circ$  full field) and the low values used were chosen in order to avoid cut-off by the

lens flange and mount, which would complicate the issue. Any further increase in field angle would undoubtedly increase the level of scattered-light illumination in the focal plane.

The application of these values will be realized when an ordinary landscape, which is more or less half sky and half foreground, is considered. Using a field angle of, say,  $50^\circ$ , we should expect that the level of scattered-light illumination in the focal plane would here be half that resulting for a uniform field in front of the camera with the same brightness value as the sky, so that from exposure No. 4 the minimum tone brightness in the foreground recordable would be something like 2% of the sky brightness. In such a case, the range of exposures given to the negative in the focal plane would hardly exceed 1:50, and even here (as a reference to fig. 2 will show) many of the lower tones would be so crowded together that differentiation between them would be out of the question. When it is remembered that these values presuppose the use of a lens-hood which cuts out all light other than that actually forming an image over the negative area, the effect of leaving off the lens-hood can be imagined.

The result of surface-treated glasses in the lens here would be to reduce the scatter factor, and thus cut down the level of scattered light illumination in the focal plane. A longer range of tones

could consequently be recorded. Whether or not a reduction in camera exposure would be found possible (as has sometimes been suggested) depends on whether the increased lens transmission is, or is not, offset by the need for fuller exposure in order to accommodate the increased tone range projected on to the emulsion in the camera. This is not a matter which can be decided by a few trial shots, for until the subject contrast range has been carefully specified, it is not easy to find out just what effect the surface treatment has had on the negative image.

In this connection, a story used to be told of a Hollywood man who came over to England to make a film, and found his exteriors coming out much too dense

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for his peace of mind. On making exposure tests, he found that he actually required less exposure in English scenery, not because of an increase in the intensity of sunlight here, but on account of the moisture in the famous English Climate which flattened his shadows so much. To get his usual contrast, development had to be pushed up. The position with surface-treated lenses is much the same: if the same negative range is to be obtained, it may be found necessary to reduce the development of camera negatives, which in its own turn will result in a reduction in effective camera sensitivity.

The value of surface treatment is not bound up with increased camera sensitivity for a given stop number, but lies in the improvement in shadow-tone contrast which it may be expected to give. Camera tests with surface-treated lenses must thus be made under carefully specified conditions, and not merely by setting up a duplicate camera in front of an otherwise normal shot and set. (To Be Continued.)

### **Training Films**

(Continued from Page 108)

most readily to an intelligent appraisal of the proceedings prior to their contact with the unit or article, and of what happens in the departments beyond their own. Out of this comes the "reason why" their own job is important, making them an important link in a well-planned series of events. It is not hard to see that all can benefit from a plan that recognizes the dignity of man, for which we are fighting, and helps to dispel the condescension practiced by some employers.

How successfully the "reason why" is used to counteract the drudgery and monotony that is found in some of the assembly jobs necessary in modern mass-production methods, is illustrated by a training-film that was made in England. A short reel was made to show how to perform a certain task for which the nimble and more slender fingers of women were best suited. It was a fairly simple task, but one that required a certain knack; and it was performed on one of the numerous component parts of a large type of bomb.

But the part the girls got to work on didn't bear any resemblance to a bomb, and when they were through with their bit of work the parts were shipped off to another factory for completion. Anyway, there was very little evidence to prove to these girls that the tiresome work they did for long hours on monotonously similar pieces of metal had anything to do with the war.

And these girls had a spirited interest in the war. Their town had been badly blitzed. But the output of their plant was way below what it should have been.

Then somebody got a bright idea. They added to this reel some footage of other training-films showing other stages in the manufacture of bombs. Then, with the cooperation of one of the British film companies they added footage showing British bombers taking off and an aerial shot of a stick of bombs dropping on its target from the belly of a plane.

But the triumph of the picture was the final scene which supposedly showed the result of the falling bombs. Lifted from a feature from the silent days this final scene showed a group of comically grotesque German soldiers emerging with their hands up from a still smoking shell-crater. And as the last German walked into the camera the sound-track played "There'll Always Be an England."

The picture was a success; the "reason why" the girls had to do such a job was adequately explained, and the part they played in avenging their homes and winning the war was convincingly conveyed in the grimly humorous finale. Add to that the nostalgia produced by the song, producing a determination to see that "there'll always be an England," and it is easy to believe the picture fulfilled its task successfully.

Anyway, production and output in that factory went up. Not only because it showed those particular workers how best to perform their allotted tasks, but because it gave those tasks a meaning—an important meaning. It did more than that even. It gave those girls the thing that any team, or any nation working as a team, needs to win. It gave them what we used to call esprit de corps but which we now call morale. And it proved what we learned in the last war, and are proving again in this one—that either for entertainment or instruction, the motion picture is the greatest morale-builder the world has ever known. END.



## Defense Films

(Continued from Page 105)

to keep the scenes natural and not too fully lighted.

Low-key lighting was, of course, planned at all times, yet not "low-key" lighting as is generally known in the industry, but rather "natural" lighting. Thus, if the principal source of light came through a port-hole, then that light was used although sometimes being reinforced with light outside the boat.

Classroom lighting presented a problem, as the ceilings were usually very low which prevented overhead and general lighting. The problem then became to conceal lights in out-of-the-way places, under tables, behind desks, columns, and ceiling-beams, but care was taken that each light would not present a source so strong that it would be noticeable, but rather just strong enough to kill a bad shadow and not be obtrusive.

Little experimentation was possible, due to lack of time. Snap judgment was the order of the day. Seldom were tests possible, especially in advance of shooting, nor were meter-readings always possible. It was necessary in most cases to judge the number of lights solely by experience, the distance away, and then go ahead and shoot.

All ordinary problems pale in comparison when shooting in the engine and boiler rooms of a ship actually in operation at sea. For the most part, such scenes embrace fast-moving machinery—black and uninspiring—and sometimes but a single camera-angle was possible because of lack of space. Choice of angles was partly overcome by the use of lenses of different focal lengths, wide-angle, medium-shot and close-up scenes being secured by this method.

Another problem which was successfully overcome was the condensation of moisture on the lens surface. In working in boiler and engine room where the temperature is frequently 140°, steam and moisture tends to collect on the lens, fogging them to the point of opaqueness. This was overcome by the use of a small 6-volt fan with rubber blades which operated off the camera battery. The fan was played on the lens at a distance of from six inches to a foot—just out of range of vision—and I cannot speak too highly of this simple method of overcoming this handicap.

Practically every moving part of the engines, dynamos and other power-driven machinery also presented a problem by causing reflections or hot spots which kicked right back into the camera lens. These were for the most part overcome by the use of liquid wax, sprayed on the surfaces with an ordinary Flit-gun. Without this wax, and the fan, I doubt that the pictures could have been made at all.

We also used, with a great deal of success, red cellophane with the approximate density of 23-A filter, with which we covered windows, port-holes and other openings directly in the range of vision. This is particularly effective in

classrooms, factories and similar locations where it is impossible to get camera-angles without including such openings directly in the picture with hot bright light outside and dim light inside. By the use of several different shades of cellophane from light yellow and amber to deep red, the exposure can very nearly be equalized.

Exteriors, of course, presented little difficulty in comparison, although we suffered the usual delays by having either too many clouds, or none at all. Of the two, no clouds at all present the worst difficulty. Nothing is so uninspiring as a perfectly blank sky for a background. Little can be done about it by any cameraman. Merely filtering out the sky does not solve the problem. Under such circumstances it is well to confine the photographic work to close-ups which do not show any sky at all, take your loss of time and wait for good photographic weather.

Our problem was further complicated by the fact that we had to picture the "Joseph Conrad" under full sail—men in the rigging—"Heave ho! m' lads" and what have you—for the "Conrad," that famous old sailing ship, was a real ship. When the wind was blowing, the boat from which we worked alongside (one of the 30-ft. Coast Guard dispatch boats) bobbed around so badly that the scenes taken from it were largely unusable, and when the sea was calm there was not enough wind to cause the sails on the "Conrad" to "belly out" such as is necessary to make good photographs.

Once when we were alongside in one of the small coast guard boats a real storm came up. There was the "Joseph Conrad" with all sails set, a painted ship on a painted sea, and the next moment the squall struck with all its fury! As she heeled over, bending to the force of the gale, and as her men swarmed into the rigging to get her canvas in before it was blown away, we cruised by her at full speed, trying to get a few short scenes of this activity before the blanket of rain blotted out her outline completely. This we accomplished by speeding up the camera, prolonging for a few seconds a much shorter elapsed time, and although both

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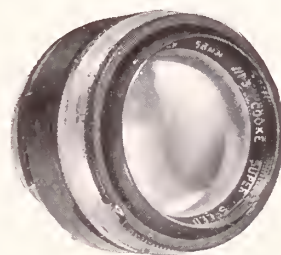
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camera and crew were drenched to the skin and the lens had to be completely dehydrated, we did manage to get a few precious scenes. This stunt can only be duplicated, I think, with an Akeley camera, such as we were using at the time, and our success was the result of my experience in photographing hurricanes in Florida and the West Indies.

The procedure is as follows, and requires the intelligent and quick cooperation of an able assistant, which I had in Russell Anderson. Akeley lenses can be changed almost instantly. The focus and lens aperture must be pre-set. The widest angle available is used first; the next-shortest focal length, having been prepared in advance with aperture and focal distance set, is ready at hand in a suitable container, as are all of the other lenses.

During the height of the storm, as quickly as the first lens becomes wet with spray, the second lens is quickly exchanged, and then the next and the next; thus, each lens while dry secures more or less footage. Meanwhile, the camera is not stopped, and though the interval during the exchange of lens produces some blank film, it is not practical to start and stop the camera motor. This at best is a makeshift means to an end, but it does sometimes provide some startling scenes which cannot be easily secured otherwise under real conditions.

With the Akeley running 96 frames per second, which is top speed for the model I was using, a few good scenes were possible, and this high speed tended to slow down the violent pitching of the boat, keep the ship in frame longer, and permit each separate scene to register long enough to tell the story of the storm.

We joined the "American Seaman" for a trip to Cuba. Enroute we secured life-boat drills under off-shore conditions; shots of the trainees actually operating the vessel under the supervision of Coast Guard officers, below-deck scenes of engine room and boiler room, classes on and below deck, and a wonderful wealth of detail so necessary for the training sequences. In Havana we pictured "Jack Tar" ashore in a foreign port, and then we flew back to Miami and joined the S.S. "Mormacpen" at Charleston, S. C. All of these Moore-McCormack boats carry cadets who have graduated from the various schools.

The continuation of our work depended entirely upon the success of this first picture and our ability to keep within the budget and time limit of production, and from this small start the entire defense film effort has developed. For this reason I have dwelt at some length on our problems and methods. Notwithstanding the loss of ten days at the very beginning, the picture was completed exactly on the day specified and at a cost slightly less than that estimated. Some 25,000 feet of negative had been exposed in exactly 40 days.

Since the daily rushes had been so satisfactory and cutting and editing had kept pace with the camera work, it was decided to go ahead with plans for an additional picture before the first was ready for final screening. The original crew was transferred to Washington with orders to make a second picture, "Power for Defense," a story of the power resources in the Tennessee Valley. Since a shooting period of only 19 days was allotted to this picture, a "second unit" crew, headed by Floyd Crosby, A.S.C., was engaged to shoot some of the exteriors and air views. The "first unit" original crew, with slightly augmented lighting equipment, set out to shoot all the interiors.

My log-book shows that in 19 days we shot, in 9 cities or locations, the manufacture of 21 different products, all of which were essential to the armed forces. These activities included shelter-tents, the making of uniforms, thermometers, ammunition of various sizes, production of manganese and aluminum, the building of steam boilers and airplanes, in addition to all kinds of exterior shots showing plants and dams.

With this single exception, this one crew, consisting of four men in addition to a Director, has shot all the pictures to date.

With the firm intention that theatre management and the theatre public alike should have every confidence in the integrity of these films, the men behind this project were determined that not even the faintest hint of "propa-

ganda" (that odious and much misunderstood description) should ever be applied to them. Great care in shooting and editing was taken to prevent any scene or sequence being misleading in any way. Actually, I feel that we "leaned over backwards" to prevent the slightest trace of "dramatics" from entering into the make-up of these films. What was wanted was cold-blooded and concise reporting and that's exactly what we got. But make no mistake, the men behind the defense films have created a new technique, a new method of making and putting films together, a method that might well be examined by all old-time producers and copied, and improved upon—if they can. And now that we are actually at war, the film program is of vastly greater importance and effort is daily being stepped up to meet the growing need for this type of film.

Big names and talent are putting a shoulder to the wheel. Two camera crews have been added. Carl Sandburg wrote the commentary for "Bomber." Mrs. Roosevelt wrote the commentary for "Women in Defense" and Katherine Hepburn narrated it. Orson Welles narrated the commentary for "Tanks." Garson Kanin is currently directing the next release "The Shield," and other big-name writers and stars will write and narrate future releases.

Yes indeed, from this first small beginning, our efforts are developing into a very important adjunct of National Defense and, I am proud to have played some small part in it. END.

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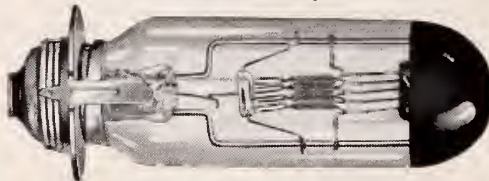


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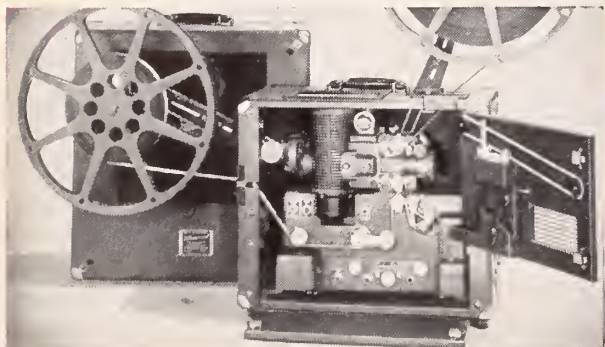
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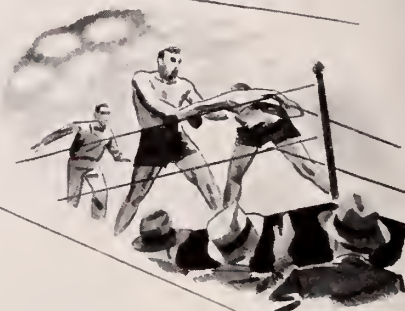
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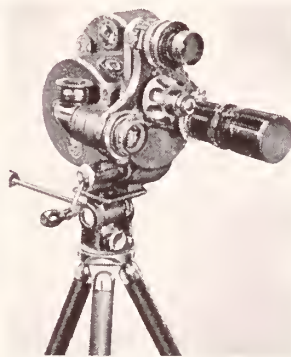
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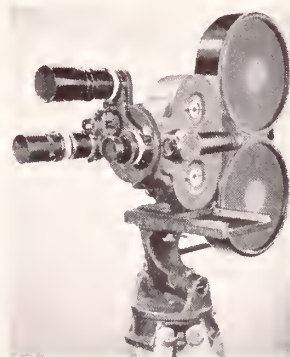
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# AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 23

APRIL, 1942

NO. 4

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### The Front Cover

This month's cover shows members of the Long Beach (Cal.) Cinema Club making a scene for America's first amateur-made Civil Defense Film. As leading lady Mary Ann Purdy chops her way into a set representing a bombed rooftop, Director Ray Fosholdt and cameramen Val Pope and (below) Clarence Aldrich shoot from the parallel, while Script Clerk LaNelle Fosholdt and Chairman Mildred Caldwell watch from the ground.

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# Animated Cartoon Production Today

By CARL FALLBERG

**B**EING funny is a serious business. Particularly in the animated cartoon industry: a cartoon studio's raw materials are ideas, and it must take these ideas, put them through an assembly line, and mold them into a commercial product to be sold on a competitive market.

And assembly-line methods are essential to successful animated cartoon production on anything approaching a commercial scale. It is technically possible for one person to do everything from the first preliminary story-sketches to photographing the finished drawings on film; but there is such an infinitude of detail involved (if you count the sketches and tracings, there are probably two or three drawings to be made for every frame in the completed film!) that the number of hands doing the work simply must be multiplied. And if the product of these many hands and brains is to be a coherent whole, their work must be coordinated—standardized—to get the desired results.

Standardization, then, is the necessary element in animated cartoon production. Conformity of methods and systematized procedure is absolutely essential in all phases of the production of a cartoon—from the initial story idea right on through to the finished color print. A picture passes through so many different hands during the course of production that confusion would result from inconsistent methods. After all, a cartoon studio is a factory in which entertainment is manufactured by the assembly-line method; and the secret of success on the assembly line lies in doing the job the same way each time, for a uniform result.

However, it isn't as uninspirational as it might sound. There is no reason to believe that cartoons are suffering because of the system used in their production. All it really amounts to is organized, disciplined thinking. Good results in any endeavor are obtained only by intelligent, practical efforts to produce those results. It doesn't matter whether the tool used is a shovel, a lathe, or a brain.

The time and thought that goes into developing a cartoon story must be well organized in order to meet rigid production schedules. Ideas don't "just come." They have to be ground out by a conscious process. Creative thinking has to be disciplined to eight hours a day, five

days a week. A story man in a cartoon studio has to let his mind wander freely, but keep his feet on the ground at the same time. He has to create by the clock, so to speak.

Story work on a feature cartoon follows the same procedure as that on a short, except that the time and money budgets are naturally greater. A short requires from three to six weeks for story work, whereas a feature story might be in process of development for a year. On features, too, there is usually a lot of side-work connected with research on settings and characters.

It's necessary in a discussion of this sort either to strike averages or to cite specific examples when mentioning methods and procedures. Since the Walt Disney studio has more or less set the standards for the whole industry, it might be just as well to use as an example here the general production procedure that an average cartoon goes through in the Disney plant.

Most of present-day cartoon story material is original, being developed within the studios. Even when an idea is borrowed from an old fable or fairy tale, the content and "business" has to be altered and modernized for cartoon treatment, so that usually very little remains of the original story but the characters and basic story line.

This isn't without justification, for some of those old fairy tales got pretty gruesome, full of murders, torture, and assorted mayhem. Even in the original version of "Snow White," the wicked queen ended up by rolling down a hill in a nail-studded barrel. This sort of stuff, obviously, can't be used.

However, details like this are not what limit the use of most fairy tales. Other factors have to be considered; general audience-appeal, sympathetic characters, familiarity of subject-matter, and so on. Then again, it's found to be about as easy to cook up an original cartoon story as it is to adapt a fairy tale or fable.

Whatever the source of the material, the first job of the story man is to develop a rough, overall continuity as quickly as possible, without worrying too much about the various gags or detailed staging of business at this point.

A story man in a cartoon studio isn't a writer, in the literal sense of the word. He doesn't write his ideas out, or type them, like a writer in a live-action studio, but draws them up with rough sketches.

**CARTOON SCRIPT.** On the opposite page are reproduced the story sketches which formed the script for a sequence of Walt Disney's forthcoming feature cartoon "Bambi." Each drawing represents one scene; the blank frame with diagonal cross-lines, a lap-dissolve. Note how completely they tell the story of the three companions who vow they'll have nothing to do with anything feminine, but successively succumb to feminine charms.

© Walt Disney Productions.

He might scribble or type the bare outline of the picture, or, as he's sitting in his room courting inspiration, may jot down the ideas and gags as he grinds them out of his brain, but immediately afterward he will get those ideas into picture form with rough sketches. Since the animated cartoon is a pictorial medium, certainly the best way to develop an idea for it is by means of pictures. A cartoon man is trained to think visually; he thinks of how his ideas will look on the screen, not how they will read on paper.

It isn't absolutely essential that the story man be an artist, but he should be able to express his ideas by drawing, at least in a rough way, so that they can be comprehended without the necessity of much verbal explanation. Written descriptions of action are hardly ever bothered with, except for someone's personal reference; indeed, many of the story men and animators have become so facile with their pencils that they can draw up a gag faster than someone could write the description in longhand. And there is a genuine prejudice against reading in some quarters of the cartoon business; they've become so used to thinking of everything in terms of pictures.

In the early days of the animated cartoon, story work was sometimes done in conjunction with actual production to the extent that animators developed their own gags and business as they animated a scene, being given so much footage to fill up with "something funny." But this off-the-cuff method of working was soon done away with as the cartoon came of age. Larger staffs brought about specialists for every job, and story work and animation became distinct functions.

Now, as studios have enlarged and become more complicated, another specialized function in story procedure has been added in the form of the story-sketch man. This artist's job is to do nothing but sketch up the story man's ideas, making careful, "dressed up" drawings, with consideration for character drawing, setup, size, and camera-angle.

By permitting the story-sketch artist to take over the burden of drawing up the continuity, the story man can devote more of his time to creative thinking, and not worry too much about the mechanical process of drawing. Often enough a good sketch artist, while not creative from the standpoint of story ideas, as a good creative draftsman can aid the story man in presenting an idea by the excellence of his drawing. Quite often, the value of a gag lies in the way

(Continued on Page 188)

Readers of THE AMERICAN CINEMATOPHILE have frequently asked us how modern animated cartoons are made. We feel particularly fortunate, therefore, in obtaining this series of articles in which Mr. Fallberg will detail the progress of a Walt Disney cartoon from the inception of the story-idea to the completion of the final Technicolor print.—The Editor.





## IT'S STILL A THRILL—!

By JOHN DORED, A.S.C.

**D**O any of you remember what impression your first sight of motion pictures made on you? Most of you were probably so young that you've just grown up to take the movies for granted. But the first film I saw—thirty feet of a scene of a moving train ground through an Edison Projecting Kinetoscope—made an overwhelming impression. It literally changed my whole future. Looking at that moving train on the screen, I sensed something of the immense possibilities that lay in the motion picture . . . I felt also that producing such pictures would lead to a life full of thrills and adventures. So right then and there, in a darkened room in a photographic laboratory in Moscow, Russia, in the year 1904, I decided to devote my life to cinematography.

Thirty-eight years have elapsed since then, and as a professional cinematographer I have seen most of the globe. I certainly haven't been disappointed as to the thrills of a movie-making career.

Nine or ten wars, to say nothing of the thrills of Arctic exploration by airplane, dirigible and submarine, have seen to that! But in addition, my first impression of the limitless possibilities of motion pictures has been strengthened by seeing at first hand the good that the cinema can do in bringing about better international friendship and understanding, by explaining to people of different nations and cultures how their fellow-men in other lands live and work and think.

That's what I've been doing this last year in South America, and what I hope to be doing again soon when I return to Brazil. Please don't think of it as "propaganda," for it isn't: it's the much more straightforward and constructive job of trying to interpret, with the universal language of the camera, the people and cultures of the two Americas to each other. When Paramount sent me to Rio de Janeiro to put my camera to work cementing the "Good Neighbor"

policy, I was amazed to discover how little had hitherto been done to provide the South American nations with news-reel coverage. Little beyond an occasional travelogue, which too greatly played up the picturesque Indians, gauchos, and so on of the hinterlands, and almost completely overlooked the many fine, modern cities like Rio de Janeiro, Sao Paulo, Bahia, Buenos Aires, and the rest, and in doing so blinded most North Americans to the fact that Latin America has a culture as thorough, and in some cases even older than that of the lands north of the Rio Grande. Because of that ignorance, too many of the films sent our South American neighbors not only trod harshly on sensitive Latin American toes, but grossly misinterpreted the Northerners themselves to their Southern neighbors.

The South American, no matter from what country he may come, is a very delightful gentleman so long as you don't meet him with the patronizing air of a very superior "big brother." Perhaps because of the many years I had spent making newsreels in almost every part of Europe, I did not start off with that liability, so it did not take me long to begin to understand the character, the customs and the traditions of the South American peoples, and to make real good friends with them. After that, my task became an easy one, and one which I believe is proving of equal benefit to the United States of North America and to the nations of South America alike.

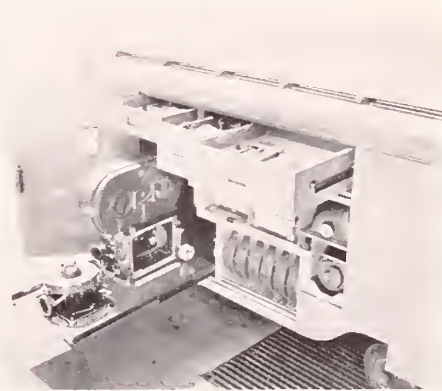
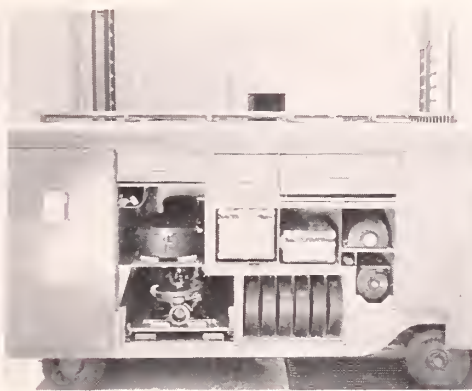
I strongly believe that in our modern, troubled time, one of the best mediums of bringing the peoples of the world to a better understanding is by means of intelligently selected newsreel stories. This war certainly upsets a great deal of this kind of ideal newsreel work, because there are so many passions, sympathies and anti-sympathies involved. But after all, the war won't last forever—and when it is over I hope the work I am doing now may blossom out and bring lasting benefits to these peoples who should be "good neighbors" in fact as well as in name.

In my own personal journey from Moscow to Rio, I took a long and round-about route. My first move was to go from Russia to Paris, where I could have a chance to learn more about the then infant movies. I spent a year with Pathé Frères, France's great pioneer organization, then went to London, where for a year I worked with the old Hepworth Film Co. In 1907 I landed in New York and joined Pathé's American branch at Bound Brook, New Jersey. A year later, I crossed the continent to join the World Film Co. studio in Portland, Oregon, and finally found myself in Los Angeles with the old Selig Polyscope Co.

Of those old days the names and faces of Cameramen Alvin Wyckoff, A.S.C., Henry Reimers, Jim Crosby, and others, are still vivid in my memory, as are Director D. W. Griffith, Hobart Bosworth,

(Continued on Page 187)





Left, one of Warner's new camera-trucks. Center, stowage-space is provided for a complete Mitchell BNC camera-outfit. Right: when moving from one stage to another, the camera need not be demounted. Note drawers for finders, filters and other accessories.

# Equipment Trucks Streamline Camera Department Operations

By E. B. McGREAL

Head of Camera and Still Dept., Warner Bros. Studios

**D**URING the past few months at the Warner Brothers' Studio we have developed and installed a system which centralizes the complete photographic equipment of a production unit in what might be termed a mobile equipment-locker. Every item of cine and still equipment is housed in a completely-enclosed equipment-truck which is delivered from the camera and still department to the stage, where it serves both camera-crew and still-man throughout the day as an always-accessible locker to safeguard equipment, accessories and film-supply. At the close of the day's work, the equipment is replaced in the truck, which is left on the stage, locked, and subsequently returned to the camera department where it is serviced during the night. Both the system and the equipment-trucks upon which it is based have proven eminently worthwhile in actual practice.

In planning this system, we had three principal objectives in mind. First, we realized that the Assistant Cameraman's real work is on the set: there is no real advantage to be gained from making him spend half an hour or more every morning collecting the various parts of

his outfit from their storage-places, checking out his film-supply, transporting it to the set, and reversing the process every night.

Second, we wished to centralize the storage and handling of each of our ten Mitchell BNC camera outfits and their accessories, and the still outfits which go with them. The delays that occur when an Assistant has to be sent from a distant stage to the camera department to get some momentarily necessary but otherwise little-used accessory are not only costly, but very likely to interrupt the thread of creative inspiration upon which players, director and director of photography are working, to the great impairment of the picture.

Third, we realized the desirability of keeping all equipment and accessories not only permanently together, but safely under lock and key. In every studio, experience has shown that delicate and costly photographic equipment, if scattered haphazardly about the average set, can all too easily become damaged, lost or sometimes stolen. At any time, this risk is serious enough; today, with mechanical and optical equipment, raw materials and shop capacity at a premium because of the demands of the War Effort, it is critical.

We have found the answer to all of these needs in our equipment-trucks and the system with which we use them. Each truck serves at all times as a permanent locker for all of a unit's cine and still equipment. In the morning, the trucks are delivered, each to its appropriate stage, by a gasoline-powered industrial tractor which is part of the camera department's equipment. The Assistant Cameraman and still-man report directly to the set, on a call de-

cidedly later than would otherwise be possible. During the day, they work from the truck as from a handy locker. In the evening, they replace their outfits in the truck, lock it, and their day's work is over, considerably earlier than would be possible otherwise. The Assistants especially appreciate this, as it gives them time to participate with the director of photography in the daily rush-print screening, and to study their previous day's work. Meanwhile, the tractor again collects the trucks, and returns them to the department, where they are serviced, film-supplies replenished, etc., and made ready for the next morning's work.

In developing these mobile lockers, we made the design as complete as possible. Then we called separate meetings of the Assistant Cameramen and the Stillmen, and let all of them study and criticize the design. Quite a number of practical suggestions resulted, which were incorporated in the final design.

The ten equipment trucks now in use were built completely in Warner Bros.' Studio shops. Each truck rides on four small, semi-solid tires. The front axle is steerable, and with a wide tread which permits the unit to be turned in virtually its own length. The towing-handle is equipped with a safety-latched coupling which attaches to any of the

(Continued on Page 173)

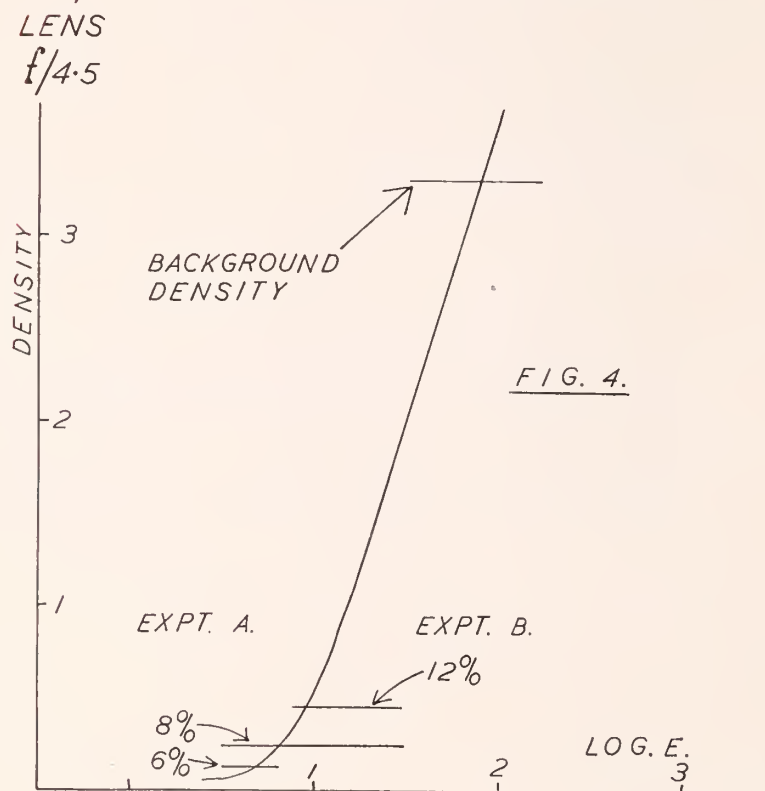
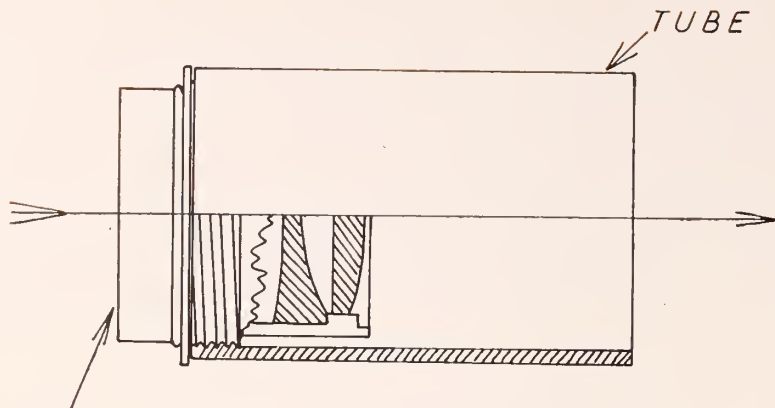


The rear compartment provides a mobile locker for the still-man's complete outfit, including 8x10, Graphic, holders, flashbulbs and all accessories.



Train of camera-trucks leave the camera department to be distributed to the various stages for the day's work.

FIG. 3.



## Scattered Light In The Lens-Mount

By P. C. SMETHURST

THE general conclusion given both by theory and experimental practice as described in last month's article is that the level of scattered-light illumination in the focal plane will decrease as the lens field angle is reduced. One would thus expect to find that long-focus lenses gave, on the whole, better-contrasted images than those of normal focal length. In practice,

of course, the exact opposite is the truth, and it is thus necessary to determine why this should be the case by attempting to find what further factor is involved.

It used to be stated dogmatically at one time that the contrast loss in a telephoto lens was due to the scattering of light on the way to the lens from a distant subject, but a careful

examination of the distant tones of a landscape (which should show the same contrast, whatever the focal length of the lens used, if this explanation is valid) in negatives from normal and long-focus lenses shows that there is a material loss of contrast in long-focus work which cannot be accounted for by this suggestion. Moreover, scatter on the way to the camera must surely be a function of the atmospheric moisture present, so that in a really dry climate no such contrast loss in long-distance work should be found. While atmospheric moisture, therefore, is certainly a partial answer to the question, it is certainly not responsible for all the contrast loss experienced in telephoto work.

Looked at from a physical and mechanical point of view, however, the difference between a normal camera lens and a telephoto or long-focus type is principally that while the normal lens has a squat and stubby build, the long-focus type is attached to a long narrow tube in order to place it correctly in front of the camera. Since this tubular mount is the sole real difference between the two types of lenses it is not surprising that when one takes up a telephoto or long-focus lens, and looks through it from the back at the sky, a bright ring of scattered light may be seen at some distance up the interior of the tube. The loss of contrast must be attributed to this scattered light reaching the focal plane.

It may now be argued that since all good lenses have well-blackened mounts with a matte finish, the intensity of this scattered light is not sufficiently great to cause the effect postulated. Unfortunately for such an argument, the average reflection factor at normal incidence of a good matte black is about 4%, but when the glancing angles involved inside tubular lens-mounts are concerned, very much higher reflection factors than this are found. Apart from this, the type of reflection at such glancing angles tends to be specular rather than diffuse. The original source of the light which strikes the internal walls of the mount is also clear: lenses are not usually provided with lens-hoods which cut off actually at the edge of the negative area, and even a ring of subject subtending the small angle of 5° at the entrance node of the lens is quite enough to make a great nuisance of itself.

It is important to note that this type of light-scatter is not in any way affected by the surface treatment of lens glasses, since it is essentially unconnected with the lens itself. The mount alone is responsible for the scatter and the contrast loss.

In this connection, it is interesting that while telephoto lenses normally show a contrast loss and a distinctly flat screen-image when printed, most of the telephoto shots taken at the Coronation Ceremony in Westminster Abbey some years back showed remark-

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Fig. 1



Fig. 2



Fig. 3



Fig. 4

## KEY-LIGHT vs BACKGROUND ILLUMINATION

By KARL FREUND, A.S.C.

ONE of the most frequently misunderstood aspects of lighting is the relationship between key-lighting and background illumination. In professional cinematography, we normally light, expose and print to obtain a normal tonal and textural value of the face of the principal player or players. Yet the background may be of high or low reflective value—that is, anything from pure white to jet black, including of course any conceivable light or dark coloring.

We can and do further complicate this by increasing or decreasing the amount of illumination falling on the background. As is well known, one can control the tonal rendition of any surface, almost regardless of its inherent coloring or reflective value, by giving it more or less illumination. It is quite possible to make an actually black surface photograph almost white by sufficient over-lighting, and to make a white surface appear black by simply keeping the light away from it.

Yet all too often in both technical discussions and actual practice, we find even experienced cinematographers giving evidence that they do not clearly understand the relationship between key-lighting, which governs facial rendition of the players, and the reflective value and illumination of the background. Sometimes we find them advocating changing the key-light level in order to obtain normal rendition and compensate for differing reflective or illumination values in the background. Sometimes we find them urging that even though the key-lighting remain constant be-

tween two scenes with photographically light and dark backgrounds, the timing of the final print must be altered to assure that in both takes the face tones will remain normal.

From my own experience, both of these viewpoints are fallacies. In every instance, we have one key factor for which we are shooting—a normal rendition of the tone and texture of the faces we are photographing. Assuming, of course, that the player's complexion and make-up are such as will give us a normal face to photograph, it is clear that to obtain a normal photographic rendition with a given emulsion and a given normal negative development, *there can be but one correct exposure-value for that face, and but one correct printer-light setting, regardless of whether the background is photographically black or photographically white, and regardless of whether these background tones are secured by inherent coloring or by under or over-illumination.*

As a means of verifying this conclusion, the Editor of this magazine and the writer recently made a series of simple, photographic tests, some of which are reproduced in the accompanying illustrations. Throughout a series of 30 exposures, the lighting on the subject (a wax figure) remained constant, while the coloring of the background was successively changed from black to gray to white, and the illumination thereon was also varied. Different overall exposures were given for each change of background or background-lighting, and the negative was printed with three different printer-settings. The results of this test, which

may easily be duplicated by any cinematographer, conclusively proved the above contention.

The tests were made on a single roll of ordinary Eastman Plus-X negative film, exposed in an Eastman "Ektra" miniature camera. The negative was developed by the Metro-Goldwyn-Mayer Studio Laboratory, receiving strictly normal development. Three prints were made, using respectively printer-lights 23, 24 (the preferred "normal" for that laboratory) and 25.

The wax head which served as a subject was given a strictly normal lighting, with the key-light, as will be observed from the illustrations, coming from a Baby Junior Solarspot at the right, "filler-light" from a single broad at the left, and suitable top and rim-lighting from 500-Watt baby spotlights to the rear and above.

This lighting was balanced to give an  $f:2.8$  reading on a Norwood "Director" exposure-meter calibrated for the MGM Laboratory's processing. *Throughout the entire series of tests, this lighting remained unchanged.*

All exposures were made at 1/50th second, corresponding to the usual exposure given by studio cine-cameras at the standard 24-frame sound-speed.

In each test, three exposures were given, respectively normal and one-half stop and one stop above normal; that is,  $f:2.8$ ,  $f:2.3$  and  $f:2$ .

In the first exposure-sequence, a completely black background was used, with no illumination falling upon it. This is shown in Figure 1.

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## CAMERA EQUIPMENT FOR PROFESSIONAL 16mm. PRODUCTION

By JAMES A. LARSEN, JR.

PROFESSIONAL production of sound-films in 16mm. may roughly be divided into two classes of film: Class A, those which are part or entirely synchronous dialogue; and Class B, those which are entirely silent with an offstage narration recorded after the picture has been shot and edited. The requirements for camera equipment in these two classes of films are quite different and will be discussed separately.

For this type of film in which scenes are shot silent at 24 frames per second and sound is added off-stage, a motor-driven camera is not required or even necessarily desirable. There are several good spring-driven cameras which give sufficient sharpness and steadiness to warrant their use in professional production. They have the added convenience of not requiring any motors, batteries or wires to supply power for operation. They are usually light enough to be operated without a tripod in the hands of an experienced cinematographer, when

necessary, and may be used on any of the light-weight "amateur" tripods. Their greatest field of use is in the filming of operations which must be shot "on the fly" without interfering with normal procedures.

Strictly amateur cameras of less than 100-foot capacity, however, are not practical or convenient to use in professional production in 16mm. The magazine-loading cameras have only 50-foot capacity and in addition have the disadvantage of a shifting frame-line as discussed in further detail below, and are not recommended for professional work. The Bell and Howell Series 70 Filmos, Bolex, Eastman Ciné-Special and Victor cameras are quite satisfactory for professional production of silent off-stage sound films.

Most important single requisite of a camera for this type of film production is that it have an accurate viewfinder for composing scenes and especially for close-ups. The Bell and Howell Filmo with its

"Positive" viewfinder combined with the alignment gauge, and the Ciné-Special with its ground glass "reflex" finder are equipped to minimize this difficulty of accurate viewfinding.

Multiple lens-turrets are convenient, but not a necessity for this type of work. A camera with dissolving shutter like the Ciné-Special and Bolex makes possible the production of fades and dissolves in the camera, which often is simpler and more economical than inserting these effects later in editing and printing.

An accurate footage and frame counter and windback arrangement is desirable for making dissolves, double-exposures, montages, etc., in the camera. In general, camera equipment for Class B film production is less expensive, less versatile and not as precision-built as that required for Sync dialogue or Class A production.

There are certain requirements that should be met by any camera being considered for professional production of synchronous sound films.

First and most important is that the camera be motor-driven by a synchronous 60-cycle motor which will automatically operate the camera at the same speed as the sound recorder and hence will keep the two films in camera and recorder in exact step.

Second; the camera and motor should operate as quietly as possible or be adaptable to a soundproof blimp.

Third; the camera should have removable 400-foot film magazines so that the loading of magazines can be done in a darkroom before the day's shooting starts, and so that the threading of the camera can be done in full illumination.

Fourth; the camera should have an accurate, erect-image viewfinder adjustable for parallax and located as close to the camera-lens optical axis as possible.

Fifth; to avoid a shift of frame-line between scenes made in the same camera on different batches of film of different shrinkage, the camera should have a registration-pin at the camera aperture



The Eastman Cine-Kodak Special, shown here with 200-foot magazine, is probably the most widely used camera for 16mm. professional work.



and should have its pull-down claw as close to the picture-aperture as possible.

In using more than one camera to make up the scenes of a single production, or in using magazine-loading cameras or a camera like the Ciné-Special which has removable film chambers, it is very likely that there will be an undesirable shift of frame-line when a cut is made from a scene shot in one magazine or camera to a scene shot in another. In a professional film, this is very annoying and frequently indicates that the producer is not familiar with professional production methods. There are ways in which this difficulty can be eliminated. In the case of the magazine-loading camera however, it is entirely a matter of chance whether two successive magazine loads will have the same frame-line. To the amateur user this doesn't make any great difference, but for professional use, this shift in frame-line is not acceptable and magazine-loading cameras are not recommended for this one reason.

In the case of the Ciné-Special which may have more than one magazine, it is possible to have the frame-lines of two or more separate magazines "matched" by sending the magazines to the factory. It is also possible to match the frame-line of several magazines to the frame-line of another camera such as the Bell and Howell Filmo or the Berndt-Maurer, and this must be done if scenes from more than one camera are to be inter-cut.

Another way to avoid a shift in frame-line is of course to shoot all scenes for a single production on one camera. Even when shooting with one camera or with cameras whose frame-line has been matched, it is still possible to get an undesirable shift in frame-line if film stock from different batches or of different ages is used. The reason for this is that film stock may lose moisture and shrink as it ages. The obvious solution to this problem is to use fresh film for each production or at least to use film of one batch or of the same age. This



The Berndt-Maurer "Sound-Pro" camera, shown above and on opposite page, is the only completely professional 16mm. camera commercially available. It has virtually every feature found in 35mm. studio cameras, and can also serve as an excellent single-system recorder as well.

effect can be minimized if the film containers are sealed as soon as purchased to prevent escape of moisture and the consequent shrinkage with age.

In addition to the above requirements, which are considered absolutely necessary by professional users of camera equipment, there are a few additional features that increase the versatility and flexibility of a professional camera. Most important of these features is a provision for precise viewfinding and focusing on ground glass directly in line with the lens. Second, is a variable-opening shutter, preferably geared to the camera mechanism for making fades and dissolves in the camera, and for photographing fast-moving objects. Although it is possible by methods which will be described in detail in later articles to introduce fades and dissolves and even wipes in 16mm. films after the film has been photographed, it is often more convenient and more economical to put these effects in at the time of shooting.

A third feature is an accurate footage and frame counter which becomes a necessity if much effect-work such as fades, dissolves, double - exposures, montages, etc., are to be made in the camera.

Fourth, a removable aperture plate is a great convenience because it makes possible careful cleaning of the aperture plate and checking of the camera aperture itself for dust particles,

lint and other minute particles which might cause a mark on the picture.

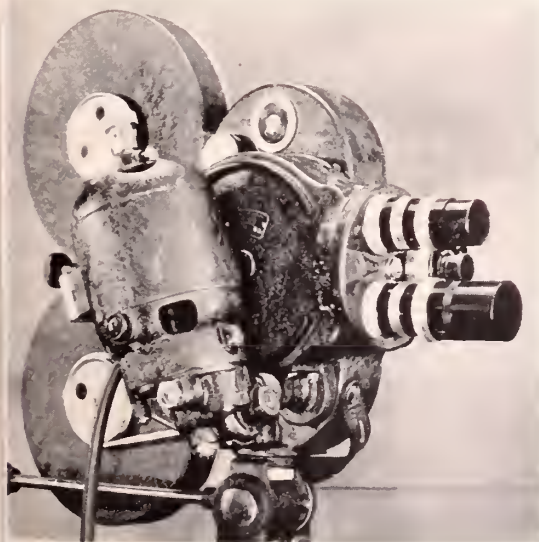
Fifth, a wind-back arrangement by which film can be rewound after exposure for a second or third exposure is a necessity if trick effect-work is to be done in the camera.

Sixth, a mechanism permitting the exposure of a single frame at a time with a fixed exposure-time is very desirable for animation and time-lapse photography.

Seventh, a multiple-lens turret is a convenient feature, although for professional work, shooting usually proceeds sufficiently slowly that a cameraman has ample time to change the lens before other details of preparation are completed.

It might be well to point out one feature that should be used with great care. Some cameras are provided with a means of focusing on ground-glass. In the experience of this author, it is impossible to attain sufficient accuracy by focusing this way. In the first place, it is a very difficult mechanical problem to locate the ground-glass surface in *exactly* the same plane as the film will occupy, and further, the eye is not usually capable of judging just at what point the very small image is sharpest. The customary 35mm. studio procedure of measuring the distance from the camera to the subject or to the plane of principal interest and setting the calibrated lens at this figure is more likely to give accurate results in focusing. This procedure is used by all 35mm. professional cinematographers and if the lenses can be checked for accuracy of markings, this method is infallible.

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The 70D-A Filmo can be equipped, as shown, with 400-foot magazines and a synchronous motor drive for professional use.





## Aces of the Camera XVI: Arthur Miller, A.S.C.

By WALTER BLANCHARD

**W**HEN Arthur Miller, A.S.C., received the Academy Award for the best black-and-white cinematography of 1941, it climaxed a thirty-three year career of outstanding cinematography, dating back to and even before such pioneer epics as "The Perils of Pauline." During those years, hundreds of pictures have flowed from Miller's camera. They've been pictures of all kinds—good ones, bad ones, and in different ones—Westerns, comedies, musicals and dramas. But they've all had one thing in common: in so far as conditions allowed, each was representative of the finest cinematography of its day.

Some of them, like "The Volga Boatman" and "Forever," were of Academy Award calibre, had there been such an Award in those days; others more recently have been persistent contenders for the "Oscars" for both monochrome and color.

Early in life, Arthur Miller developed two absorbing interests—his love of fine horseflesh, and a love of making pictures photographically. As he was light and agile, his fondness for horses spurred him on to a successful career as a jockey. "But," he says, "I couldn't stop making pictures. Wherever I raced, I always managed to have an improvised

darkroom somewhere in the stable. I'd snap pictures of the horses, the trainers, and the other boys. Between races I'd develop 'em and sell them—three prints for fifteen cents. There wasn't any profit in it at that price—but it was enough so I could buy more materials and take more pictures. That was all I cared for."

Then fate stepped in. An injury put a permanent end to his riding days. When he recovered, he learned that his stable rented horses to a group of people who made moving pictures. He saw to it that he soon got the assignment of taking the horses to the studio for their day's work.

"And there," he says, "I fell in love. That big, brass-bound, leather-covered camera that photographed their pictures fascinated me. So did the work I saw the company's cameraman doing. I decided that, sooner or later, I'd be a cameraman, too!"

"As soon as I'd gotten well enough acquainted with the troupe to know who was who, I hit the cameraman, Fred Balshofer, who was also a partner in that old Kaybee Company, for a job.

"He said 'yes', (things were like that in those old days!) and I went to work in the laboratory. That was the pathway to a camera job back in 1909, and believe me, it put you through a *real* course in practical photography. Today, if you work in a film-laboratory, your job consists mainly of putting film onto a developing-machine or taking it off, without any particular need for 'knowing why.'

"But in those early days, it was different. You began—at least I did—in the room where they perforated the film; most studios and labs bought their film unperforated, as it was cheaper, and perforated it themselves. Then you went out as an assistant in the negative developing room, helping to wind film onto the developing drums and racks, carrying things around, and making yourself generally useful in a hopeful and unskilled way.

"From there, you usually went for a while into the department where they toned and tinted positive film. After that, you spent quite a while in the chemical mixing room, learning how to mix developers for negative and positive film, learning just what each chemical did, and so on.

"From there, you went into the printing room, and learned about that part of the work. From this, you went into the positive developing department, and began to put some of what you'd learned to work. Finally, you emerged into the negative developing room again as a really skilled laboratory-man. The next step up was to the king-pin job of the whole lab—that of negative timer, where you had the responsibility of deciding just how much development a given negative should be given, and how it should be printed.

"That spot was the parting of the

(Continued on Page 182)



# THROUGH the EDITOR'S FINDER

AMERICA hasn't been in the war so very long, but already we have seen a number of the industry's finest cinematographers and special-process specialists volunteering their services to the armed services. Many more have followed suit, and are only waiting for their commissions and orders to come through from Washington. As time goes on, still more of these invaluable men will go, and it is certain, too, that regardless of age, others will be drafted to serve as only they can in the growing photographic sections of the Army, Navy and Marine Corps.

It doesn't take much of a prophet to see that before long the industry is very likely to be rather hard pressed for Directors of Photography capable of keeping its cameras going. In normal times, it is to be expected that these vacancies could be filled by promotions from among the many Operative Cinematographers who are ripe and ready for advancement; but today, since the majority of such Operatives are among the younger men, they, too, will either be volunteering or drafted for military service.

Yet making motion pictures for morale and entertainment is an essential and the industry's cameras must be kept grinding. Where, though, are to be found the men to do it?

As to that, we have a suggestion to offer. Those men are here among us now, ready and oh, so eager for the work. They can be found among the forgotten men of the industry—the older men of the industry, whose skill helped build the cinema to its present stature, but who, perhaps because of age or minor physical disabilities, perhaps because they simply had the misfortune to step on the wrong political toes, have lately been passed up when the contracts were handed round.

Those men are good. We won't say that all of them are as good as ever, though we believe most of them are. We won't say they could safely be entrusted with a "Gone With the Wind" or a "Citizen Kane." But in wartime, we don't make pictures of such magnitude. And these forgotten cameramen—there are many of them any of us could name—are fully capable of photographing the average wartime production.

It may be argued that many of these men have not been active in major-studio work for a number of years, and that during that time many changes have taken place. But—these men are none the less highly-skilled artist-technicians, and above all, they are intelligent. They can learn, and adapt themselves.

So—wouldn't it be a good idea to be a bit foresighted for once? Wouldn't it be a good idea for each major studio to put several of these men under contract now? We may not need them immediately, but we could take advantage of that fact to give these men the added

training they need to familiarize themselves with today's studio ropes, standing by, watching today's aces at work—proving themselves on shorts, tests, second units, added scenes, backgrounds, and the like. Then, as the men who are carrying the burden of today's production go—voluntarily or otherwise—to serve their country, our industry's photographic "home guard" will be trained and ready to step into the breach and keep the cameras rolling until the emergency is past!

RECENTLY one of the industry's most esteemed directors celebrated a much-publicized anniversary. We join the rest of the industry in saluting an outstanding showman, who has over the span of years contributed greatly to the glamor of the screen. But at the same time, we cannot avoid taking exception to some of the claims he (or his publicists) make as to his responsibility for certain technical advancements. Admitting that we personally were not present at the birth of these innovations, we cannot help feeling that a gentleman who, while not a technician himself, has always seen the wisdom of surrounding himself with the ablest technicians available, must logically be less responsible for such developments than were the artists and technicians who actually executed them.

For example, this gentleman takes credit for introducing to the industry the first unrelieved cross-lighting used in motion pictures. Very probably it occurred in one of his pictures: but is it not much more likely that the cinematographer in charge of his cameras had the daring to follow what was at the time a very popular style of still portrait-lighting, which the director opportunely named and "sold" to his distributors?

Again, he or his publicists claim for him the invention of the first camera-boom. But unless the gentleman has changed greatly in recent years, he is more likely simply to have said to his associates "I want such-and-such an effect" (possibly in recollection of the moving-camera effects pioneered by Karl Freund, A.S.C., in "Variety" and "The Last Laugh") and left it strictly up to his technical associates to figure out how to get that effect.

More recently, he has stated that he was responsible for the invention of the soundproof camera "blimp," which restored the mobility lost by early-talkie cameras. Isn't it strange, therefore, that the records of the U. S. Patent Office show that the basic patent on camera-blimps was issued to a cinematographer—John Arnold, A.S.C.?

Frankly, we don't believe this director was consciously attempting to cheat anyone out of deserved credit; his record of actual achievement is too big for that. But being a noteworthy showman and

gifted with an excellent appreciation of the value of publicity, he would be less than human if he declined to accept publicity for innovations that occurred on his production and which the technicians actually responsible considered too much a part of their routine jobs to be worth talking about.

In all this there's a lesson for today's cinematographers and technicians. New ideas in equipment and methods are being evolved constantly. Studio publicists and journalists are bound to notice many of them, and publicize them. And since the reading public is more interested in personalities than in abstract ideas, these innovations are bound to be credited to some individual. If the cinematographer or technician actually responsible gives the inquiring publicist or reporter a quick brush-off on the ground that it's "just part of the job," or that he's too busy to be bothered about yesterday's shots, somebody else is certainly going to have his name publicly linked with that particular innovation, whether he deserves it or not. And that somebody else is usually the director, who has learned that while exaggerated or baseless publicity never "made" anyone, reasonable publicity, backed up by ability and performance, can certainly advance anybody's career. So—the next time the unit publicist or a reporter asks you questions, why not meet him half way? He wants to help you—and he can, if you'll let him!

We'd like at this time to express our sincere appreciation of the response our readers—amateur and professional alike—have given to the Defense Filming Roll-Call printed in the last two issues of THE AMERICAN CINEMATOGRAPHER. The replies, which have been and still are coming in daily, have been intensely gratifying, not only in number, but as regards the type of equipment mentioned and the calibre and experience of the individuals reporting. Very frankly, we've been surprised to learn how many 16mm. professionals read this magazine, and are ready and willing to volunteer their services and equipment to aid the War Effort.

We'd like to remind readers who have not yet sent in their reply, either on the printed coupon or as a letter, that the need still exists and is increasing. We have already received official inquiries from Government Agencies as to the availability of 16mm. sound projectors and projectionists for showing films, and also inquiries as to 16mm. amateur films photographed in foreign lands, which may be loaned for duping to aid the War Effort. More of the Government's film-using departments will be turning to the 16mm. amateur or professional for direct and indirect aid. We want to help them in this, so we urge every reader to provide us with the information requested. It's one way 16mm. filmers can help the drive to Victory!



# A.S.C. on Parade

Recent—and very welcome—visitors include Lieutenants Joseph August, A.S.C., and Harold "Winnie" Wenstrom, A.S.C., of the U. S. Navy Photographic unit.

Picture folks who brag about what they've done with and for Uncle Sam's Armed Services since Pearl Harbor ought to take a look at the record compiled by Ralph Staub, A.S.C., the "Screen Snapshots" producer-director-cameraman. He's been on the job since the first draftee was inducted at Ft. MacArthur in the days of way back when. Since, he's made reels at the San Diego Naval Training Station, the San Diego Marine Base, Stockton Air Force center, March Field, the Cadet Flying School at Hemet, and all important USO, WVC and Defense Bond rallies within miles. Over 700 prints of these reels are now showing in the theatres of this country and the friendly nations. Pretty good record, Ralph, we'd say!

Congratulations to a new non-resident member of the A.S.C., newsreel ace James Seeley, A.S.C. He's with "News of the Day," following a distinguished career of specialization in newsreel and short-subject camerawork. Among other noteworthy film-reportages he's responsible for what is probably the most spectacular single "story" ever put on film—the flaming reportage of the "Hindenburg" disaster. Welcome to the ranks of the A.S.C., Jim—and we hope we'll have a chance to get acquainted with you in person soon!

Lester White, A.S.C., is not only an "ace" cameraman, but a member of the "ACES"—the Army Camps Emergency Service. T'other day, with Morgan Conway, he hosted better than a platoon-full of men from camp to a night at the grunt-and-groan bouts. And they do say that when the "ACES" fitted out a medical emergency truck, Les donated a whole gallon of *castor oil*!

Wilfrid Cline, A.S.C., back prematurely from his James FitzPatrick Technicoloring expedition to Mexico and Central America. It seems after wrecking three sets of tires in a couple of weeks on the southern Mexican roads, Will and "Fitz" decided to call off the trip until transportation conditions were better. However, they brought back some swell footage on little-known parts of Mexico. Will, incidentally, came back doing a rave over Mexico and the open-hearted hospitality of Mexico City's cinetechanical community.

L. William O'Connell, A.S.C., fresh from drawing critical raves over the

major-studio job he did in eight days for the Kozinsky Bros.-Monogram "Klondike Fury," draws a nice assignment. MGM has signed him to direct the photography of a short, "The Corner Store," and, incidentally, break William ("Genius") Saroyan gently into the business as a director!

Can't keep up with that fellow Eddie Cronjager, A.S.C.. Seems only a couple of weeks ago he announced he was going to free-lance. Since then, he's completed "Friendly Enemies" for Edward Small-United Artists, and now we hear he's back at 20th-Fox to film "The Pied Piper," one of the plums of the year.

Karl Freund, A.S.C., sadly considering the tire situation, and wondering if his plan to move from Brentwood to a ranch in the San Fernando Valley—miles farther from the studio—is as clever as he thought it was when he started building.

At least two-thirds of the members of the A.S.C. know what kind of a car Harry Wild, A.S.C., drives. At the last A.S.C. meeting, just before he took off for Brazil, his snazzy green coupe was parked neatly in the gate of the Society's parking-lot—leaving a space on either side just half an inch narrower than anybody's front fenders!

Thought on seeing Tom Tutwiler, A.S.C., at the last meeting—which of us has put on the most weight these last few years, Tom, or Ye Ed? 'Twasn't so long ago both of us were handsome young juveniles—at least as regards figger! Well, maybe we both married good cooks.

Past-Prexy John Arnold, A.S.C., beaming over a new term contract which will keep him skipping MGM's Camera Department for some years to come.

Joe Ruttenberg, A.S.C., also had his option picked up by discerning MGM execs.

Winding up "It Happened in Flatbush" (originally "Dem Lovely Bums"), Charles G. Clarke, A.S.C., draws the assignment of filming "Through Different Eyes."

George Robinson, A.S.C., filming "Destiny," the Richard Dix starrer at Universal.

Lucien Ballard, A.S.C., complete with a new contract, filming "Orchestra Wife" for TC-F.

Dan Fapp, A.S.C., assigned to "Priorities of 1942" at Paramount.

William Daniels, A.S.C., glamorizing Judy Garland in "Big Time." Or have they changed the title to "Me and My Gal?"

Lee Garmes, A.S.C., waving a cheery greeting from his low-slung British Riley sports sedan, the only one of its breed in Hollywood.

Joe MacDonald, A.S.C., assigned to "The Postman Didn't Ring," for Twentieth.

Ray June, A.S.C., filming "Shadow of a Lady" at MGM . . . wonder if it's any relation to "The Thin Man"—or just another glamor-girl on a diet?

Karl Freund, A.S.C., goes from one extreme to the other . . . finishing Tortilla Flat," he hops right into filming "A Yank at Eton," with M. Rooney mugging between an Eton collar and a top hat.

Paul Vogel, A.S.C., putting the photographic punch into MGM's "Sunday Punch."

Hal Mohr, A.S.C., back at Universal photographing Irene Dunne in "Sheltered Lady" for Greg LaCava.

If there's any delay in deliveries on Jackson Rose's "1942 American Cinematographer's Handbook," the reason is that crime doesn't pay. He's busy at MGM lensing "Idle Words," the latest in this popular series.

Add coincidences—same day Ye Ed's brother-in-law joined Britain's celebrated Eagle Squadron, Stanley Cortez, A.S.C., signed to lens Walter Wanger's picture of the same name!

Victor Milner, A.S.C., away for a four-month vacation now that he's completed his current picture with Preston Sturges at Paramount.

Harry Stradling, A.S.C., presides over the cameras filming "Love Me Not" at MGM, with Norma Shearer and Robert Taylor.

W. Howard ("Duke") Green, A.S.C., is getting quite the civic figure down in Brazil. In Rio to skipper the Technicolor aspects of Orson Welles' film, he's been called in by the City authorities as a special color-director to supervise the decorations for Rio's great annual carnival, which Welles is going to Technicolor.

George Folsey, A.S.C., assigned to MGM's "Grand Central Murder."

John P. Fulton, A.S.C., and Milton Krasner, A.S.C., have a pair of nice, new Universal contracts to keep them worrying about next year's income tax.



# PHOTOGRAPHY OF THE MONTH

## KINGS ROW

Warner Bros.-First National Production.  
Director of Photography: **James Wong Howe, A.S.C.**

Special Effects: **Robert Burks, A.S.C.**

Photographically as well as dramatically, "Kings Row" is one of the outstanding productions of the season. Any film photographed by the celebrated Chinese cinematographer is likely to be worth looking at; and here, with a strongly dramatic story which lends itself to his style of dramatic camerawork and lighting, and ably seconded by production designer William Cameron Menzies, Jimmie Howe has turned out one of the finest photographic performances of his career.

The picture itself has a setting that is far from glamorous—a small American town near the turn of the century—but it has a story which is all dramatically red meat, and one which covers a remarkably wide range of interlaced dramatic moods. Howe's treatment accentuates realism, yet at the same time employs every artifice of composition and lighting to heighten the emotional mood of plot and action. You're seldom conscious of photography *per se* as the picture unreels, yet afterward it is surprising how many scenes you find yourself re-viewing mentally—not because of action, but because of the indelible mental picture Howe's sensitively-keyed photography has implanted. The crisp, high-keyed cleanliness of Maria Ouspenskaya's household—the atmosphere of foreboding menace Howe gives to even the simplest scenes in Claude Rains' domicile—the soft, cool freshness of the scenes in which Kaaren Verne figures—the visual contrast between the later sequences in Kings Row and the parallel action as the hero studies medicine in the Vienna of yesteryear.

You remember, too, the way Howe's lightings and compositions seem so bafflingly simple and so thoroughly natural, yet if you study them, you see how very much they do to build your emotional reaction. "Kings Row" could very well serve as a textbook of cinematic composition.

Howe deals most interestingly with his players. He doesn't strive to glamorize them—not even the much-publicized Ann Sheridan: instead, his camera and lighting treatment heighten their characterizations, especially those of Claude Rains, Charles Coburn and Betty Field. Miss Field, for instance, has certainly been photographed more glamorously, but never, we'd say, to more convincing dramatic effect.

The settings are another factor worthy of high commendation, reflecting the highest credit upon production designer Menzies and art director Carl Jules Weyl.

The special-effects work of Robert Burks, A.S.C., is another praiseworthy

feature of the production. With the exception of one or two matte shots which could perhaps have stood some improvement, Burks' work is of such a high order one is scarcely conscious of it—beyond which, no special-effects cinematographer can ask greater praise.

All told, we'd recommend "Kings Row" to anyone who wants to see just how much outstanding camerawork can add to a production.

## REAP THE WILD WIND

Paramount Production (Technicolor)

Directors of Photography: **Victor Milner, A.S.C., and William V. Skall, A.S.C.**

Special Photographic Effects: **Gordon Jennings, A.S.C., and Farciot Edouart, A.S.C.**

Underwater Cinematography by: **Dewey Wrigley, A.S.C.**

Victor Milner, A.S.C., and his Technicolor partner, William V. Skall, A.S.C., have given "Reap the Wild Wind" a magnificently pictorial Technicolor mounting which makes the production seem a good deal more important than it would otherwise. Special-effects specialists Gordon Jennings, A.S.C., and Farciot Edouart, A.S.C., aided by architect W. L. Pereira, have to an incredible degree brought the rushing sweep of the "wild wind" and waves to the screen, and they, with Dewey Wrigley's remarkable undersea color-camerawork, have achieved for the film a remarkable climax in the underwater battle against a giant squid. Deservedly playing third or fourth fiddle to the phototechnicians, producer-director Cecil De Mille has done decidedly better than his wont with the rest of his Thirtieth Anniversary production.

"Reap the Wild Wind" isn't in any sense a "significant" or erudite production, but thanks to Milner's skill, it is one of the most thrilling examples of Technicolored pictorialism ever put on the screen. In scene after scene the combination of composition, lighting and stirring coloring give the impression of colorful paintings. But where the painter can only suggest motion, these scenes provide actual movement in full measure. Yet so skillfully are motion and composition coordinated that the dominant effect is not so much of surging motion as of a painting in which the colors are laid on as with the vivid airbrush of a Maxfield Parrish.

This is especially true of the seafaring sequences. Indeed, on leaving the theatre one's dominant impression of "Reap the Wild Wind" is likely to be the vivid blues and the cool greens of these scenes. Yet throughout the picture, the coloring of each sequence is deftly keyed to match the dramatic value of the action, in much the same manner as was pioneered in "Blood and Sand." You're hardly conscious of this, however; yet what coloration could be more dramatically descrip-

tive of the sequence in which the principal players wait, becalmed and helpless, while John Wayne deliberately wrecks his ship than the dull, foggy grays that were used?

When next year's Academy Awards are passed out, we confidently expect to see Gordon Jennings, A.S.C., and Farciot Edouart, A.S.C., step forward to claim the one for special photographic effects. "Reap the Wild Wind" would be bereft of both its wind and much of its wildness if you removed the innumerable scenes in which these two artists have brought sea and storm into the confines of a studio tank-stage. Their work, with the possible exception of one or two miniatures which could well have been retaken, is a convincing tribute to the skill of the modern special-effects and transparency technicians. The same may be said of the spectacular underwater camerawork of Dewey Wrigley, A.S.C., which not only gives the picture its dramatic punch, but provides some unforgettable pictorial highlights, as well.

## RIO RITA

Metro-Goldwyn-Mayer Production.

Director of Photography: **George J. Folsey, A.S.C.**

One would hardly expect an Abbott and Costello comedy to be an example of fine photography, but that is exactly what George Folsey, A.S.C., has made of "Rio Rita." There's comparatively little left of the original musical comedy, but Folsey's skill makes the 1942 version if anything a more memorable pictorial achievement than the more straightforwardly spectacular two-color Technicolor version of a decade ago.

Wherever possible, Folsey's flair for decorative set-lighting makes the film of genuine pictorial interest. His treatment of the players is also exceptionally pleasing.

In the sequence where the two romantic leads meet again, and sing "Long Before You Came Along," you see an unusual demonstration of the skill of modern cinematographic lighting. The longshots of this sequence were made actually outdoors, on the desert. The closer shots were made indoors, on the stage. Yet they intercut so perfectly that unless one is consciously looking for such details, this fact is likely to slip by unnoticed. Let it be said here, too, that these bona fide exteriors by Folsey or some uncredited second-unit cinematographer are uncommonly fine, too.

## THE MALE ANIMAL

Warner Bros.-First National Production.  
Director of Photography: **Arthur Edison, A.S.C.**

Special Effects by: **Willard Van Enger, A.S.C.**

"The Male Animal," though diverting  
(Continued on Page 172)





# Diary of a Defense Film

By LA NELLE FOSHOLDT

Long Beach Cinema Club

**I**NCENDIARY Bombs? Make a picture about them? Why that ought to be easy!

Yes! That's what we thought but we found out it wasn't so easy. Following December 7th, our Club wanted to do their bit for National Defense, so we mailed letters to Heads of different Defense groups offering our services.

They suggested an Incendiary Bomb picture should be made and that a scenario would be prepared and sent down to us.

Weeks passed, and no scenario came. There was a lot of red tape holding up the scenario, although it was no fault of the Defense Officials who were so anxious for us to start.

We felt valuable time was being wasted. Why not write a story ourselves? We had the Chief of the Fire Prevention Bureau as a member. He could help us.

We selected our own Defense Committee and made our very ambitious junior past-president, Midge Caldwell, chairman. Then things began to happen. She appeared before the Civilian Defense Council and various other organizations to be sure everything going into the picture was absolutely authentic. Scenario meetings were held three times a week and under the guiding hand of our Fire Prevention Chief, Claud Evans, a story began to take shape.

I never knew so many points in a story could be argued over so much! Our one scenario member who generally took a nap, forgot to take it. An hour of pros and cons and then a paragraph would finally be typed. I began to wonder if we could ever make the picture and still all be friends.

At the end of two weeks the scenario-minded members were still talking heatedly, but decisions were being made. One of the first was to make it from a woman's angle. We felt we should show

the average housewife combatting a magnesium bomb instead of one or two men. The feminine part of an audience would think, "if she can do it, I can," where if we showed a man combatting it, a woman who might be alone would not even attempt it. As far as the man's angle was concerned, we knew all men enjoy watching a pretty girl and would think, "if a girl can do it, I can!"

All of our story was to take place during the daytime because most housewives are alone during the day and if a raid should happen then, the work would fall on their shoulders.

We felt the majority of people would understand the picture better if we presented all the wrong ways first and all the right ways last instead of mixing the two. We studied pictures on different subjects where right and wrong ways followed each other and found we had to run them several times in order to understand them clearly.

Finally our story-outline was finished and we felt like guarding it with our lives after the time we had spent on it. In our hurry to get our picture into production we selected a group of 12 members to take two or three duties apiece and carry the majority of work on their shoulders. This was done because we could not take a large number of members into the important places where we would be shooting. We found out how cooperative public officials can be when you're doing something for your country and so we tried to be considerate of them.

Locations began to present themselves as a big problem. We wanted a house to burn down. We compromised on a room that could be set afire. Chief Evans was just the one to take charge of it. We had to have at least a dozen magnesium bombs. He could do that too. In fact we began to thank our lucky stars we had him in the Club!

In the next few days, our chairman, Midge, Chief Evans and Ray Fosholdt, turned property men, location crew and finance committee. A lot happened, and the next Sunday was set for our first

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Above: Midge Caldwell, Chief Cameraman Clarence Aldrich and Director Ray Fosholdt make a dolly-shot for the beauty-parlor sequence. Middle: Three of the Club's cameras prepare for an angle-shot on the "roof-top" set, while leading lady Mary Ann Purdy waits to chop her way into the picture. Bottom: The Long Beach Cinema Club at work making the beauty-shop sequence. Note overhead scaffold for lights.



On opposite page: left, Mary Ann sprays the burning curtains preparatory to attacking the burning incendiary bomb with sand and shovel. Center: Defense filmers on the set; left to right, Script-clerk La Nelle Fosholdt; Director Ray Fosholdt; Chairman Midge Caldwell (kneeling); Technical Director Fire-chief Claud Evans; Cameraman Val Pope; leading lady Mary Ann Purdy, and Earl Everley. On this page: left, Mary Ann fights the fire in approved style; right, she prepares to chop through the roof-top set. Photos by Julian Hiatt, Jack Nicholson, C. W. Lothrop and Earl Everley.



## Scenario Of America's First Amateur-Made Civil Defense Film

THE AMERICAN CINEMATOPHIL is honored to be able to publish here the scenario of America's first amateur-made Civil Defense Film. Camerawork on this production has just been completed by the Long Beach Cinema Club. Editing and recording will be finished about the time this appears; though some modifications are possible in final cutting and details of the narration, the presentation and technical details are authentic and approved by Defense Officials.—THE EDITOR.

### TITLE

**INCENDIARY BOMBS** Superimpose titles over women's faces looking up with puzzled looks on their faces, asking—

*Sound:* Fast and overlapping: (Mixed voices). "How big are they? What do they look like? Do they explode? How do we put them out? Shall we use sand? Shall we use water? Won't someone tell us. What will we do?"

Slow fade of sound and picture.

Scene 1: Close-up Fade in. Picture of bomb in "Life" Magazine. Dissolve to

Scene 2: Int. Beauty Parlor, medium long-shot (Day). Include four women, two under drier, one manicurist and one having nails manicured.

Scene 3: Close-up of Mrs. Kay who is holding magazine as she says—"Have you heard anything about these magnesium bombs?"

Scene 4: Close-up of Mrs. Em saying: "Oh you hear so many things you don't know what to believe!"

Scene 5: Medium Close-up of Mrs. Ann saying: "Well, I wish someone would tell us the real truth."

Scene 6: Medium long-shot through beauty parlor window of Fire Chief driving to curb in official car. Fire prevention sign on door. Dolly in to

Scene 7: Medium-shot of Fire Official getting out of car.

Scene 8: Medium-shot of Fire Official walking to front of shop. He looks at pad in hand, then to number over door. Enters shop.

Scene 9: Medium-long overhead shot of inside beauty shop, showing women in background and Fire Official entering in foreground. Fire Official walks to desk.

Scene 10: Two-shot as Fire Official comes up to desk and asks attendant for manager.

Attendant leaves scene.

Scene 11: Medium-shot of Gossiping women.

*Sound:* Women talking.

Scene 12: Close-up of Mrs. Kay saying:

*Sound:* "I hear they're so big they'll smash your house all to pieces."

Scene 13: Close-up of Manicurist saying: "I hear they're just little things but they'll burn your house down before you can do anything about it."

Scene 14: Medium Close-up of Fire Official as he overhears women and glances their way. He shakes his head in disgust at their conversation.

Scene 15: Close-up of Mrs. Em saying:

*Sound:* "I keep a dishpan of water in the sink all the time. I'd sure put one out in a hurry!"

Scene 16: Medium Long-shot of Fire Official walking over to women.

Scene 17: Close-up of Fire Official saying:

*Sound:* "Ladies, I couldn't help overhearing your conversation. I'm afraid you have been badly misinformed. I heard one of you mention the tremendous size of these bombs. The magnesium bomb in common use today is—

Scene 18: Medium Close-up of Fire Official holding cross section of bomb showing construction as sound continues.

"—14 inches in length and 2 inches in diameter. They weigh a little over 2 lbs. In the nose of the bomb is a cap which ignites when striking an object, setting fire to thermit in the center of bomb. The thermit in turn ignites the outer shell of the bomb which is made of magnesium. They will burn for approximately 15 to 20 minutes if left alone."

Scene 19: Close-up of Fire Official saying:

*Sound:* "These bombs can be controlled—but not by throwing a pan of water on them."

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Above, production scene at the Fire Department alarm switchboard; below, filming the big fire scene, the cameraman who lensed an angle-shot from the rafters proved a real smoke-eater. Note construction of set and provision for overhead lighting.





Autoload camera operated by Porter's remote control gadget, in cockpit of plane just before fatal crash.

## Amateur Movie Gadget Contributes To War Effort!

By WILTON SCOTT

A SIMPLE little gadget, home-built to increase a cine-amateur's movie-making pleasure, has done its bit to strengthen America's wartime wings! Because it enabled a 16mm. camera to record every significant detail of the crash of an experimental plane, better, stronger planes are now going out to the Air Force of the United Nations to make every one of us safer and more certain of Victory.

The story really begins more than a year ago, when Dudley E. Porter, an inventive-minded California cinefilmer, decided to build a remote-control device for his cine-camera. He wanted a gadget which would smoothly start and stop

any type of cine-camera not once, but repeatedly, so that he could expose the full footage permitted by a single camera-winding either as a single scene or as several. Since no accessory of the kind was available commercially, he designed and built his own.

Porter's remote-control was described in *THE AMERICAN CINEMATOGRAPHER* a year ago, in the March, 1941, issue. Inside its drum-shaped housing was a clockwork spring which, working through a beautifully-built escapement, actuated cams which in turn, moved a little rod attached to the camera's shutter-release up or down as might be necessary. Each time the

remote-control was tripped, the rod made half a stroke, so that it would turn the camera on, and keep it running until tripping the controller again made it turn the camera off. Tripping was done by a solenoid, electrically operated through a push-button which could be at any distance from the camera.

A few months ago one of Porter's friends, an engineer for one of America's major aircraft plants, learned of the gadget and saw in it an ideal means of operating a 16mm. cine-camera for making a photographic record of the readings of airplane instruments during test flights.

He borrowed Porter's controller forthwith, and attached it to a standard Bell & Howell "Autoload" Filmo 16mm. magazine-camera. The camera, fitted with a wide-angle lens was mounted in the test plane, just behind and over the shoulder of the pilot, in a position where its lens could photograph the whole of the plane's complicated instrument-panel. The control button was carried into the forward cockpit, and placed where it could be conveniently operated by the test-pilot.

Throughout the many preliminary tests, camera and remote-controller operated perfectly, bringing back for the study of the engineers an accurate record of all the instrument-readings in each test.

Finally came the climaxing test—a torturing power dive to terminal velocity. Up into the blue droned the plane—two, three, four miles and more above the earth, until it was invisible to the watchers on the ground. Then down she came—straight down, the engine screaming a frightening song of unleashed power. Accelerating earthward, faster and yet faster, until it reached a maximum speed beyond which neither the straining engine nor the fateful pull of gravity could urge her faster!

The pilot began to pull out from his dive.

Then—something went wrong! A wing wavered—snapped—broke away. And the plane, its wind-resistance lessened, rushed even faster to earth. The anxious watchers below could see the doomed plane all too clearly now—and no blossoming cloud of white silk answered their prayers that the pilot might bail out.

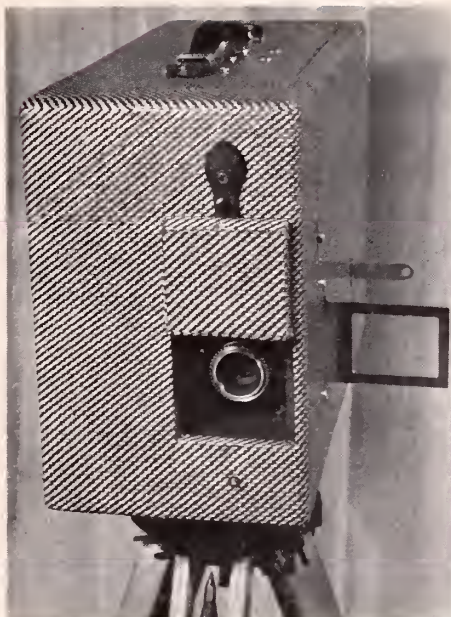
Plane and pilot crashed and were crushed and burned to indistinguishable fragments, leaving behind them the burning question "What happened up there? Why and how did that plane crash?"

The camera couldn't tell: it was demolished, and Porter's control with it. But what of the film?

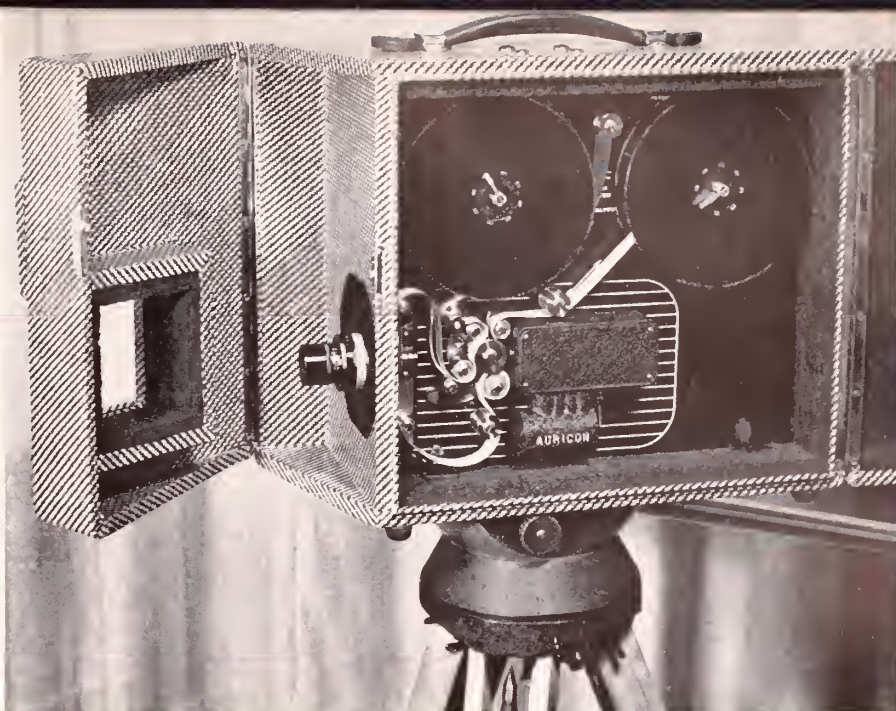
They found that, at last, undamaged. At the moment of the crash, the film-magazine had been catapulted forward, almost intact. Hurling bodily out of the camera, it was embedded in the pilot's body, which had protected the precious strip of celluloid from the fire which

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Left, front view of Auricon camera. Right, camera opened to show 200-foot daylight-loading reels and of course of film past picture and sound apertures. Note how front opening serves as a deep sunshade.



## Auricon Sound Camera Makes Bow

By WILLIAM STULL, A.S.C.

**M**AKING its bow at precisely the time when it is most needed by the makers of 16mm. defense and training films, the Auricon 16mm. sound-camera has just been introduced by the E. M. Berndt Corporation of Hollywood to serve as a companion to the firm's successful Auricon 16mm. recorder. Powered by a 110-volt synchronous motor and making use of the same amplifier as the Auricon recorder, the new camera may be used alone for single-system synchronized sound-and-picture recording or interlocked with the Auricon recorder as a double-system unit. It should prove an ideal equipment for field use by professional and governmental film units where portability, simplicity and ruggedness are essentials.

In design and construction, the new camera is completely in keeping with today's necessity for conserving critical materials. The parts essential for perfect mechanical functioning of the camera are precision-built of the finest tool-steel; parts not so essential—such as the case—are built of non-critical materials. In many components, this necessity has been turned to definite advantage. The camera's case, for example, instead of making use of the cast or stamped metal to which we have become accustomed during the years of plenty, is of wooden construction; and this has been found doubly advantageous as this type of construction not only seems to have better soundproofing qualities than metal, but has also made possible a design in which the camera serves as its own carrying-case. The same is true of various other components, in which the elimination of

critical materials or assemblies has produced unexpected practical advantages.

As may be seen from the illustrations, the camera is of box form. The case is of wooden construction, leather- or fabric-covered, and lined inside with foam-rubber sound-insulating material. The case therefore serves as a very efficient sound-absorbing "blimp." So efficient is this that we would say that in the average medium or long-shot, or in close-ups where the professional practice of using a slightly longer-focus lens is followed, no additional soundproofing should be needed. In extreme instances, a single, quilted "barney" should render the camera completely noiseless.

The entire operating mechanism is mounted on a heavy steel frame-plate inside the case, suspended on special vibration-damping mountings. The film-moving mechanism is of course of tool-steel, with precision-cut gears and sprockets.

And right here let it be said that the Auricon camera, as a camera, is uncommonly well-designed. Regardless of the excellence of its sound-recording component, no sound-camera can be better than the picture it puts on the screen. Tests we have seen of this camera's performance indicate that even without the sound-recording feature, the camera's picture-making performance would be exceptional. The film appears to run flatly through its aperture, giving a perfect optical image, and the steadiness of registration can be compared only to professional, pilot-pin designs. It produces a picture definitely steadier than do most

of the cameras used for 16mm. professional work.

The movement is an excellent piece of design. The film-moving claw moves straight into the film, and straight down, then in disengaging moves straight out of the perforation, disengaging itself completely from the film before starting its upward travel. This, in combination with suitable edge-guiding and an excellent, though lightly tensioned pressure-plate, gives registration which is only surpassed by the best pilot-pin designs. The pressure-plate, incidentally, is easily removable, so that the aperture may be inspected and cleaned much more easily than is possible in most designs.

This intermittent is also self-framing. In the event that the film is simply placed in the aperture, and not immediately engaged with the film-moving claw, the camera, on starting, will not damage the film, but the claw will automatically engage itself in the perforations, assuring perfect framing and trouble-free performance.

Recording is done at the main driving-sprocket. In theory, this appears unconventional, to say the least; but in practice, as proved by the successful use of Auricon recorders over a period of years, it simplifies matters greatly. The sprocket is fitted with precision-cut teeth, and governed by a fairly heavy flywheel. The film is pressed into unusually good contact with the circumference of the sprocket by means of a spring-tension roller of Spanish felt. A carefully-planned differential is maintained between the speed with which the film enters the sprocket, the speed of the sprocket itself, and that of the take-up, with the result that the film's movement over the sprocket appears to be unusually free from irregularities.

A particularly ingenious drive is employed. Synchronous motors of the comparatively larger and slower-running sizes such as might ordinarily be employed for a unit of this type are not easily available of late, and moreover do not have the most desirable smooth-run-

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so! That's exactly the way that upper picture was made!

You see, you overlooked two facts. First, in an extreme landscape long-shot like that your lens and meter are taking in a tremendous amount of light reflected from a large and very bright area. Second, that dark foreground is likely to produce a rather prominent dark pattern in your meter's eye, and give it a reading that's definitely too low to give the correct exposure-value for the scene as a whole.

Luckily, the meter-designers have taken this into consideration, even though too few of us follow the lead they've given us. Take a look at your meter's dial. You'll notice there are several markings on it aside from that arrow you generally use in taking your readings. One of them, slightly to the left of the arrow, is marked "A" or " $\frac{1}{2}$ ." If, in taking your reading on extreme long-

## Filters - - or Correct Exposure?

By ART LLOYD, A.S.C.

GOOD cinematography consists not only in knowing what to do with your camera and accessories, but—and perhaps more importantly—in knowing what *not* to do. Take the matter of filters, for instance. We all know that filters, correctly used, can do remarkable things for a picture, turning day into night, making clouds stand out, and clearing up the distance of extreme landscape long-shots, and so on.

And that's just where many amateurs (and sometimes more than a few professionals) go badly wrong. They know that filters can do a lot—and so they try to use filters in scenes where they really aren't necessarily helpful at all.

The two illustrations on this page illustrate a very common example of this. Anyone who has ever screened many amateur movies has certainly seen plenty of long-shots like the upper picture—a fairly attractive composition, but with the distant part of the landscape so "washed out" that it's only a glary white nothingness on the screen.

And if he's either a professional or one of the more experienced amateurs, he's had the makers of such shots say to him, "What filter should I use to get a shot like the lower picture?"

The answer doesn't lie in filtering at all. It's a matter of correct exposure only. Believe it or not, the only differ-



ence between the two pictures is that of exposure! The upper one is badly overexposed; the lower one is correctly exposed—and the difference is fully as great as you could get with any filtering.

At about this point, I seem to hear someone saying, "That can't be the only difference. I expose my long-shots according to the meter's reading—but I don't get anything like that lower picture!"

You probably do—but how do you take your reading? Do you take it by simply standing beside the camera, pointing the meter at the scene, noting the brightness-reading, matching the arrow on the calculator dial to that brightness, and reading off your exposure? I thought

shots like this, you'll bring that "A" point *instead of the arrow* to the brightness-value your meter's indicator has given you, you'll give your picture just half the normal exposure. For example, with a brightness-value of 200 and a film-speed of Weston 16, which is a pretty fair average for exterior work, taking a reading in the normal way will give an exposure-reading of  $f:11$  at the usual cine-camera exposure of  $1/30$ th second. But if you take the reading using that "A" marking, your reading will be  $f:16$ —which is the correct exposure for an extreme long-shot under such circumstances.

Try it—and see how your exposure-errors in landscape shots vanish! END.



# Shooting For Conservation

By ORMAL I. SPRUNGMAN

CONSERVATION is uppermost in the minds of Americans today. We talk of conserving men and materials and eliminating waste. But long before the era of blitz-mad dictators, there were thousands who were preaching another sort of conservation. Conservation of wildlife.

There were far-sighted folks who felt that if future generations were to enjoy the privilege of popping ducks, deer or free-wheeling cotton-tails, something would have to be done by those who lived in the present. Some believed that declaring a moratorium on hunting alone would bring back waterfowl millions, but they ignored the fact that enemies apart from man were decimating their numbers.

During the past two summers I have had the privilege of traveling throughout Canada's breeding grounds to help shoot movies and stills for Ducks Unlimited, internationally known non-profit organization of waterfowl conservationists. I have knocked about in dry alkali lake beds, waded and paddled duck-infested marshes, and taken movies from low-flying planes on the aerial duck census of the Northlands.

This work has hammered home to me not only the importance of sound-minded conservation, but the effectiveness of amateur movies as a medium for carrying this message to fellow sportsmen. In fact, a movie camera in the hands of every angler or hunter could become a potent force in eliminating game-hog-gishness and producing real sportsmen instead of meat hunters.

You may not realize this at first, but the manner in which you perhaps unconsciously do your filming has a definite influence on your audience. If you show only the lusty kills and the endless strings of game or fish, you give the impression that big bags make the sport and the sportsman. But if you cut in occasional glimpses of beautiful scenics along the way, novel sequences of camp life, made intimately real with humorous personal action, you emphasize the fact that the taking of game is only secondary and that love of the outdoors is uppermost always.

A fishing film that shows a pair of anglers fetching whoppers hand over fist isn't half as acceptable as a similar movie of the pursuit, actual battle and landing of a single beauty, climaxed by the preparation of fish as part of an outdoor meal—all told by means of close-ups.

What, then, makes good fodder for movie-making sportsmen?

If you belong to a club of fellow

conservationists, try a cine record of the group's efforts at winter feeding of birds or the restocking of fishless streams. Lean heavily on the educational side, and aim your film at young audiences, for these make up the sportsmen of tomorrow. Preach conservation through picture rather than title.

Filming game on the hoof or birds on the wing calls for rapid exposure adjustments, a telephoto lens, and a steady shooting arm. Tripods are quite bunglesome at times, particularly when swinging to follow birds in flight. For this reason, Ducks Unlimited field men prefer a gunstock mount, fashioned from a pine block or, better yet a discarded rifle-stock, to permit rapid-fire movie-making from the shoulder.

Although there may be occasions when a longer lens is desirable, the 3 or 4-inch telephoto seems to be ideal for duck filming. By shooting at 24 or 32 frames per second, instead of the usual 16, a smoother sensation of flight is obtained. Slow motion at 64 frames per second is a film-eater-upper, and is used only in rare instances. Geese, since their wing is slower, may be filmed at 16-frame speed.

Now, where does one get the ideas for a conservation movie?

When Ducks Unlimited found that 70 per cent of the duck crop was destroyed on the breeding grounds before it even reached the hunter, the 1940 movie was designed to show graphically and pictorially exactly what happened to those unfortunate seven out of every ten ducks.

On the prairie provinces, drought was not difficult to picture in midsummer. Cracked ground and dusty lake beds were plentiful. Ponds filled with spring runoff had invited ducks to nest. Now that the youngsters were ready to waddle, lakes and sloughs were dry, and it was not unusual to find and photograph young broods heading cross-country over cactus patches looking for water. Their corpses rimmed lakes that had disappeared. Ducklings must have water or they cannot survive.

Fires caused by smouldering peat, lightning, careless campers or the improper burning of farmlands bring death to millions of potential ducks each year. Now and then you find the scorched bodies of mother ducks in charred marshes—hens which would not desert their nests but preferred to cook with their eggs. Such movie close-ups, filmed through rising smoke threads, are strikingly impressive.

Torrential rains often bring floods which wipe out nesting ducks. Occas-

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# Short-Cuts For Defense Filmers

By PHIL TANNURA, A.S.C.

**M**AKING a Civil Defense picture in 16mm. is a job of very nearly professional importance. There are plenty of little phototechnical details which are likely to trip you up if you don't approach the job with professionally-minded foresight. Luckily, too, there are a number of little professional short-cuts which can save you trouble and expense, and sometimes go a long way toward saving your cinematic bacon, as well.

Probably the first thing to think of as you approach an assignment of this nature is the question of cameras. If the filming is to be done by a group or club, you'll almost certainly be planning to use several cameras, at least for the filming of your picture's "big" scenes, so that you can get a variety of angles at a single take.

Of course they're all "good" cameras, complete with fast lenses and a plutocratic price-tag. But—will the scenes they shoot match up as to definition and frame-line on the screen?

Never thought of that, did you? Well, that little detail nearly wrecked Cecil De Mille's first professional picture, thirty years ago. Different parts of the picture were shot with two different cameras which didn't "frame" uniformly. The same thing can happen in today's 16mm., for two cameras—sometimes even of the same make and model—may not frame identically. The ounce of prevention in this case is to make tests beforehand, and pick only cameras which have identical frame-lines.

It's a good idea to test your lenses beforehand, too. Some lenses tend to give a crisp, wiry-sharp picture, while others produce a decidedly soft image. The softness may not be objectionable in itself, but when scenes made by the soft lens are closely intercut with shots from the sharp lens, the difference can become really disturbing. Better play safe and assemble a test-reel of scenes made by each of the lenses you expect to use, under conditions comparable to those you'll be facing when your production starts. That way, you can weed out the goats from the sheep!

Then, too, your script may call for a dolly-shot, even though you haven't a dolly with which to make it. Professional writers aren't the only ones who have the habit of writing in anything they please, and leaving it up to the production-crew to figure out how to get it!

If you have the time and money, you can build up a really professional dolly quite easily by going to the nearest auto-wrecking yard and investing in a pair of "Model T" front axles and wheels. Underneath these axles, bolt a wooden platform large enough to hold your tripod and camera crew, and provide at one end a suitable handle for pushing and steering the dolly. The earliest professional dollies were made that way, and worked very well indeed. For the smoothest results, you'd better plan on a track, too. Make this from two layers of 1x4" boards, with the ends cut diagonally and overlapped, so the dolly will roll across the joints smoothly. For safety's sake, better add an upright plank to serve as a guide-rail on the outside of each track, too.

But if you can't do this, there are several ways you can improvise a dolly. If you live in a large city, you may be able to borrow one of the low, four-wheeled carts used to move materials around industrial plants. They'll do quite well. Clyde De Vinna, A.S.C., when he was faced with this problem on location in Dutch Guiana, solved it by getting a three-wheeled delivery bicycle and replacing the box that went between the two front wheels with a low wooden platform. Another time, Charles G. Clarke, A.S.C., improvised a dolly by simply getting a child's coaster-wagon and squatting in it, Eyemo in hand, while his assistants pushed!

Another problem you're very likely to face is that of finding yourself working in a room with a highly-polished floor, on which tripod-legs slip almost as badly as on ice. The professional has a little gadget that takes care of this in a hurry. He simply takes three little pieces of flat plywood, perhaps two or three inches square, and connects them by lengths of rope or chain about two or three feet long, running from a sturdy metal ring. Spread the three pieces of plywood out on the floor—one at the point each of your tripod-legs will stand—and dig the metal-shod points of the tripod-legs into the plywood blocks. This will give your tripod a good, firm foundation, which can't slip, as each block pulls through its chain against the other two. You can do the same thing by fastening the three chains—without blocks—to the tripod-legs, but using the blocks is better because it not only protects the floor underneath, but gives your tripod

a solid anchorage on cement and brick paving where even a sharp-pointed tripod-leg might slip otherwise. Often, professionals will make a little hemispherical depression in the upper faces of the blocks to give the tripod-points an extra-good seat.

If your picture includes many interiors, it's a very good idea to wire your lamps through a high-low switch. These can be obtained commercially, but no home electrician should have trouble rigging one which permits you to burn a string of Photofloods either in parallel (the usual way) or in series. Burned in series, the lamps operate at considerably reduced brilliance, which greatly extends their useful life. Use them in series while lining up your shot, then throw the switch to parallel for full brilliance during actual shooting.

Incidentally, when filming interiors—particularly in Kodachrome—it's a good idea wherever possible to over-light your scenes, so you can stop down your lens moderately, say to  $f:3$  or  $f:3.5$  at least, to gain added depth and definition.

When actual shooting on your picture is through, by all means have a black-and-white reversal duplicate made to use as a work-print. Remember, your original—whether Kodachrome or reversal black-and-white—is for all practical purposes the master negative from which all future copies of your completed film will be made, and no matter how carefully you may try to handle it in editing, you can't help marring it with some scratches and dirt. Let your work-print take this rough usage, and then cut your original to match it.

Incidentally, you'll do well to do the splicing on your original with a Griswold splicer, which is the only moderate-priced 16mm. splicer which can be adjusted to make a negative splice. This type of splice is narrowest, and is therefore the least noticeable in the completed duplicate print.

Your picture will in all probability be released in sound, at least in the form of a narrative sound-track. Most 16mm. sound-on-film recording studios make their charges on a basis of time, and rehearsing your narrator at the recording studio can prove very expensive, indeed. You can do quite as well at home, projecting your work-print on a sound-projector at 24-frame speed, and rehearsing until the narration fits the picture perfectly. Then, if you have a disc recorder available, record it on disc and play it back in synchronism with the picture, to check and double-check the effect.

If you should happen to have a recorder which can be synchronized with the projector, as in the Synchro-Sound system, you can even go a step farther, and record your disc in absolute sync with the picture. Then, in transferring the sound to the film, all you need to do is re-record from disc to film. This can eliminate a lot of trouble and some expense, as well. **END.**



# AMONG THE MOVIE CLUBS

## Club Cooperation

Two months ago, following the lead of the progressive 8-16 Movie Club of Philadelphia, we suggested some of the benefits that could come from a more active cooperation between the nation's amateur movie clubs. Club activities and conditions being what they are, reactions to the idea are coming in slowly—but they're coming in, and favorably.

Chief interest centers at present on the possibilities of inter-club exchange of films and programs. Philadelphia's 8-16's, Syracuse's Movie Makers Association, the Long Beach Cinema Club, and others, all have films they'll gladly loan to other clubs for exchange showings.

To start the ball rolling, we urge all clubs who have either club productions or films whose individual makers would be willing to have shown to other clubs, to send their films to the Editor of THE AMERICAN CINEMATOGRAPHER for review and listing. We'll publish a brief review of such films, together with the necessary information as to running-time and from whom they are available. When we know enough films are available to make it worthwhile, we'll send out to all clubs on our mailing-list a catalogue of these films, including the reviews. Philadelphia 8-16's Frank Heininger volunteers his services, and that of his Club's attractive bulletin, "Closeups," in getting the project under way.

We'd like to hear from the officials and program chairmen of other clubs as to their reactions to the plan. Frankly, we think it's a swell idea—and one of infinite benefit in these wartime days of restricted filming—but the real decision rests with you. HOW ABOUT IT?—The Editor.

## Election, Banquet, Contest for Utah

The Sixth Annual Banquet of the Utah Amateur Movie Club (Salt Lake City) was an outstanding event. The attendance numbered 180 members, guests and friends. The new officers, elected at the February meeting, were installed. They included Ted Guerts, President; Wendell Taylor, Vice-President; John Huefner, Secretary, and Theo M. Merrill, Treasurer.

The program for the meeting was cleverly printed in a circular folder on the cover of which was imprinted in silver the design of a 16mm. reel. The big feature of the evening was of course



OLD AND NEW IN UTAH—Outgoing and incoming officers of the Utah Amateur Movie Club. Left to right Joseph G. Jeppson, 1941 President; Wendell Taylor, 1942 Vice-President; Katherine Rauch, 1941 Vice-President; LaGrande W. Anderson, 1941 Treasurer; Ted Guerts, 1942 President; John Huefner, 1942 Secretary, and Theo. M. Merrill, 1942 Treasurer. President Guerts was winner of the "A" (16mm.) division of the Club's Contest, and Treasurer Merrill in the "B" (8mm.) division.

the announcement of the results of the Club's Annual Contest. Winners of the Award Cups were: "A" (16mm.) Division, new-president Ted Guerts with his film "Snap-Happy;" "B" (8mm.) Division, Ted Merrill with his film "Snow-white and Rose-Red;" and in the Musical Division, Al Morton with his film "Utah Trails." The "B" Division was judged by the Editor of THE AMERICAN CINEMATOGRAPHER, who provided a score-sheet to show upon what basis he made his decisions, and an individual, written review for each picture in the division. This was particularly appreciated by the contestants, who felt that no matter where they placed in the Contest, they still received helpful comments about their films.

JOHN HUEFNER, Secretary.

## Shelter Shows

In England, "Shelter Shows" of 16mm. movies are being held in air-raid shelters beneath railway arches, and in basements under city stores. Both professional and amateur films are being used. Among the latter are contributions from the Australian Amateur Cine Society—"Then He Woke Up" and "Coast Town"—are already in use, and two others—the prize-winning "Nation Builders" (still one of the best, if not the best amateur film ever made) and "The City of Sydney"—are en route from Australia to England.

## Education for Minneapolis

March meeting of the Minneapolis Cine Club was scheduled to be educational in nature. Carroll Davidson was scheduled for a demonstration on the

amenities of (good) home projection. Mort Smith screened "Death in the Afternoon," with a resume of its technique. Carroll Michener's film, "Sanctuary," centering on the dedication of his church as a cathedral, was due for its Club premiere.

ROME A. RIEBETH.

## Long Beach Busy

The Long Beach Cinema Club will inaugurate their Defense Stamp and Bond Drive with a breakfast at the Hilton Hotel, Saturday morning, April 4th and again on April 11th, on which evening a dance will be held at the Municipal Auditorium.

On April 12th a Bathing Beauty Contest, sponsored by the Long Beach Junior Chamber of Commerce and the City of Long Beach Amusement Committee, will be held near the bath house on the beach. This parade will be filmed by club members who will compete for prizes.

Mildred Caldwell, Claude L. Evans and Clarence Aldrich demonstrated their titlers at a recent meeting, showing their finished work on the screen, which was most effective.

Clay Lindemuth presented his film "Sun Valley Rodeo," also pictures of Yosemite. Schoolteachers Alma Worley and Dorothy Dingley are photographing interesting pictures of the gasoline trucking industry which was the subject chosen by students under their training.

The club members are uniformly behind the early completion of their current film on defense measures which are principally the methods of combating incendiary bombs. Shooting on the film

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# Home Movie Previews

## PIONEER TRAILS

Semi-scenario documentary, 175 feet 8mm. Kodachrome,  
Filmed by John Huefner.

This is one of the finest and most ingenious films of its type we've screened. The photography is uncommonly fine; the compositions, and the cleverness employed in effecting some of them, as fine as anything we've seen in 8mm. since the great days of Randolph Clardy and Tatsuiichi Okamoto. The titling is extremely fine, both as to wording and to photo-technical handling.

Our criticisms must necessarily be few and minor. For example, the trick of suggesting a shot made from within a pioneer's covered wagon, by placing in front of the lens a canvas-covered hoop, is clever, but it is perhaps a bit overdone. Incidentally, for the most convincing effect, this foreground-piece should be shaded, since obviously the interior of a covered wagon would not be sunlit. The first shot of Emigration Canyon should be eliminated or retaken, to eliminate the intrusive touch of modernity created by the telephone-pole at the left of the frame. And there are a few shots of the wagon which could well be eliminated in the interests of preserving the continuity of motion which suggests that the pioneers are traveling consistently from one place to another. It is rather confusing to see the wagon traveling (as it does in most shots) from left to right, and then suddenly see it for a shot or two cross the screen from right to left; it gives a suggestion that maybe the pioneers have turned back.

## SNOW WHITE AND ROSE RED

Scenario Film, 225 feet 8mm. Kodachrome.  
Filmed by Ted Merrill.

There is very little that can be said in criticism of this picture, for it is among the best amateur-made scenario pictures we've seen—especially so since its cast is completely of children. The attention to detail in costuming, continuity, etc., mark it as the work of an amateur who really knew his business. The direction—always a difficult problem when working with children—is particularly good. The children appear well at ease throughout, and there are plenty of the little "natural" touches that have to be thought out carefully ahead of time.

Our chief criticisms are of a minor nature. Most important, we can't help wondering why the maker didn't use a simple camera-trick to show the bear being transformed into the prince. It is so easy in a shot like that to simply use a rigid tripod, stop the camera at the point desired for the transformation, mark the player's footprints, have him change his costume, step back into his original footprints, and continue the scene which, on the screen, becomes a magical transformation. If the camera

has a wind-back, of course, this can be done even more effectively by adding a lap-dissolve or even superimposed "wipes," a la "Topper."

The picture could also have benefited from more spoken titles and, if possible, a few more close-ups. The spoken titles should also have been on cards more uniform with the other, narrative titles. However, "Snow White and Rose Red" is a picture any amateur or club could show with pride to any audience.

## THE TREASURER'S DREAM

Scenario; 200 feet 8mm. Kodachrome.  
Filmed by B. M. Bevans.

Here's a film that would be a sure prize-winner if it were judged by a jury of people who have served and suffered as treasurers of any amateur or professional camera-clubs. They'd agree that Bevans' scenario of the troubles of a club-treasurer who just couldn't make the "Asset" and "Liability" columns of the club's books talk the same language isn't particularly exaggerated.

The nightmare sequence is cleverly handled, making use of double-exposure, split-screen effects, and the like, aided by excellently descriptive pantomime. However, the climaxing scenes of this sequence, to our mind, at least, lost some of their dramatic force because the camera-angles on the approaching trolley-car were not well chosen. Most of them gave the impression that it was safely on the other track: it should have been shown always approaching from left to right across the screen, and the final shot would have been much more effective if it had been made from an extremely low camera position—as nearly ground-level as possible, with the camera shooting upward, so that the oncoming car seemed huge and menacing.

The lighting of the opening sequence deserves special praise. It has some of the most completely natural-looking Kodachromed interiors we've ever seen.

## QUALIFYING FOR MEMBERSHIP IN THE BONES SKI CLUB

Semi-scenario film, 200 feet 8mm. Kodachrome.

Filmed by Joe Jeppson.

Here's a picture with a genuinely novel basic idea; the only thing lacking is phototechnical assurance in its picturization. The Bones Ski club appears to be a uniquely exclusive organization, eligibility for which hinges on the applicant's having actually broken some bones while skiing. The film tells the story of how one hardy skier qualified for membership and—after his fracture had healed—was duly accepted and initiated.

The opening sequences get the film off immediately to a bad start. The introductory scenes are a series of badly underexposed long-shots of skiers coming down a steep, wooded slope. These

should certainly be eliminated. The next sequence is pretty good, dealing with the unsuccessful attempts of a very pretty girl to get into the club on the strength of a sprained tendon. It is only after this lengthy preamble that the main character—the man who breaks his leg—is introduced. From this point on, the picture is pretty well worked out, though more close-ups—especially in the initiation sequence—would be helpful, and the underexposed long-shots of skiing should certainly be eliminated, and if possible replaced with closer angles and better exposures.

Our suggestion would be to open the picture with a title telling specifically what the club is. Then introduce our hero and the girl talking about the difficulty of qualifying for membership. She could then describe her unsuccessful attempt, which could be connected to the rest of the picture by Photofade wipes at the start and end of the sequence. After a couple of close-ups showing the two nodding in agreement at the girl's remarks on the difficulty of qualifying, the man could remark, via close-up and title, that one never could tell when he might unexpectedly "make the grade," and start out on his skis. From this point, the picture could continue very much as it is, with the addition of close-ups wherever possible.

## HULA HOLIDAY

Travelogue, 600 feet 8mm. Kodachrome.  
Filmed by C. A. Thomas.

This picture is, in general, a well-planned and well-executed travelogue—one which covers its subject, a trip to Hawaii, very completely indeed. Photography and titling are good, though in some scenes the exposure could be improved and the composition distinctly bettered. A number of long-shots are overexposed: this can usually be cured by taking meter-readings for such extreme landscape long-shots using the "½-normal" instead of the "normal" point on the meter's calculator.

Our chief criticism of the picture is that, like so many amateur travel-films, it includes far too many shots of personal friends of the filmer—who usually mean nothing to the average audience—and all too often the people shown are acting particularly silly for the benefit of the camera. If the film is intended for general showing, most of these shots should certainly be removed, and segregated in a separate reel. This way, you would have two separate pictures, each complete in itself: one a really fine travelogue of Hawaii as you saw it; the other, a strictly personal record of the friends you saw there. Fortunately, too, in this picture there is ample footage so that enough footage to make a complete "personal" reel of very near-

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# THE BULLETIN BOARD

With War Orders, raw-material shortages and similar wartime handicaps seriously restricting the introduction of new photographic products, it seems to us that "The Showcase," our usual department devoted to such announcements, has become superfluous. In its place, "for duration," we are herewith instituting a new department which, as its name implies, is intended to bring to our readers the many and varied news items of interest to wartime filmers, both professional and amateur, which constantly come to us not only from manufacturers, but from Governmental film agencies, and from individuals and groups in all parts of the United Nations. We sincerely hope this new department will prove of constructive service to all concerned.

THE EDITOR.

## Army Engineers Want 16mm. Kodachrome Films

An opportunity is offered to all 16mm. cinematographers—amateur and professional—to participate in the Nation's War Effort. The Corps of Engineers of the U. S. Army urges all cinematographers who have on hand any of their own, original 16mm. Kodachrome films photographed outside the territorial limits of the United States to list their reels with the Engineer Board immediately.

DO NOT SEND THE FILMS THEMSELVES UNTIL REQUESTED. What is desired at this time is full information as to the length of the films, country in which photographed, nature of scenes, etc.

A statement permitting the duplication of selected scenes should be included. Films will be carefully handled, and not injured in any way, if loaned for duplication.

Address all letters to the Motion Picture Section, The Engineer Board, Fort Belvoir, Virginia.

## Standardize GE Recorder Lamps

Due to the national emergency, the Government has called upon lamp manufacturers to standardize and insofar as possible, to reduce the number of different types manufactured. Accordingly the Incandescent Lamp Division of General Electric has announced the standardization of lamps for use respectively in RCA and Western Electric sound-on-film recorders.

For some years RCA recorders, and some others, have used a 10-Volt 7.5 Ampere T-8 bulb UV recorder lamp, but at the suggestion of RCA an improved

lamp was designed, rated at 10.5 Volts 7.8 Amps. This lamp is exactly similar in construction to the older lamp, but due to changes in the method of manufacture, it is possible to operate the new lamp at 10.5 Volts with a considerable increase in recording effectiveness. At this voltage, the new lamp has substantially the same life as the older 10-Volt lamp. It may also be operated at 10 Volts, under which conditions its effectiveness would be the same as that of the older design, but with substantially improved life. This type is now being standardized.

In some recording equipments such as Western Electric and others, several different types of 9-Amp. T-8½ bulb lamps have been used. One of these was a 9.5-Volt with a short filament coil; another was the 11.1-Volt with a longer coil; and another was a 10-Volt lamp with a stretched coil approximately the same length as that of the 11.1-Volt globe, but with the coils spaced farther apart. In order to obtain a single lamp which will meet all the requirements filled by the three former designs, G-E is now standardizing on a 9 Ampere, 10-Volt T-10 bulb lamp with the filament wound on a small mandril. This produces a filament of exactly the same length as the 11.1-Volt design and with the same number of turns per inch and turns per segment, to assure uniformity and high brightness. The new lamp also offers improved maintenance of effectiveness due to the larger bulb size which reduces blackening.

## British Salvage Film

Recently the Advertising Department of Britain's Southern Railway produced a film entitled "Salvage Our Scrap." Intended for showing to railroad employees in the railroad's travelling theatre-car, the picture shows how salvage can be gathered and waste avoided. Some glaring instances of wastage in time and material are also illustrated which may, the makers hope, put the brake on thoughtless individuals who leave lights burning, who tear up envelopes, who indulge in useless personal phone-calls, and the many other things England has found to damage her War Effort. All the players in the film are non-professionals, members of the railroad's staff.

## Modernizing Filmos

With deliveries of new photographic equipment greatly curtailed by the War Effort, Bell & Howell has introduced two valuable services for keeping existing Filmo cameras and projectors in service. First is a service for modernizing older models. Included in this are such aids as adapting early Filmo projectors to use 750-Watt lamps instead of the 250-

Watt ones with which they were originally equipped; converting Filmo 8mm. projectors to accept 400-foot reels; modernizing early-type Filmosound projectors; fitting three-lens turrets, backwinds and hand-crank fittings on Filmo 8mm. and 16mm. cameras. The second service is one providing inspection, maintenance and repair service for Filmo cameras and projectors at economically standardized prices.

## New Screen

With Civil Defense and Employee-training films taking the spotlight and often requiring projection before larger audiences than usual in either amateur or 16mm. commercial use, the introduction of Radiant's new portable, glass-beaded screen in larger sizes will be of interest. Known as the "Institutional Model DS," the new screen is made in four sizes, including 52x52, 45x60, 60x60, and 52x72. Its "auto-lock" feature is stated to eliminate all set-screws and other locking devices, while an automatic clutch permits raising and lowering quickly and easily to any height on the tripod, which is constructed of extra-strong square tubing on both upright and extension-support.

## High-Speed 16mm. Rewinds

A high-speed, motor-driven rewind for 16mm. film has been introduced in England through Pathe Equipments, Ltd., of London. The device is stated to be self-contained, with motor-drive, reel spindles, inspection lamp and controls mounted on a complete table unit. Speed of operation is variable, controlled by knee pressure, and an automatic brake is fitted to the idler spindle.

## GE Offers Arc Welding Films

Six one-reel, all-color sound films designed to help the War Effort through faster and better training of welding operators are now under way for the General Electric Company's arc welding sales division. Titled "The Inside of Arc Welding," the films are being produced by the Raphael G. Wolff Studios, Hollywood. First of the series covers the fundamentals of arc welding, and will be available about April 20th. Others will be ready about June 1, and will deal with technique of arc control and electrode manipulation for all welding positions, using both DC and AC equipment. The films will be made available to public, private and industrial welding schools, as well as to other interested groups, through the Visual Instruction Section, Publicity Department, General Electric Co., Schenectady, N. Y., or the nearest GE office or arc welding distributor.



## Photography of the Month

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entertainment, lays no particular claim to being either a "big" picture or an unusual example of cinematography. Arthur Edeson, A.S.C., does his work in his usual, highly competent style, however. And the picture is worth seeing for one or two sequences—particularly those in the garden where Henry Fonda and Herbert Anderson drown their amatory sorrows in unaccustomed bourbon. In these sequences, Edeson has achieved some of the most remarkable effects of almost third-dimensional roundness and plasticity this reviewer has ever seen. The sequence of the football rally is another highlight—an excellent example of the all too often forgotten value of rhythmic cutting, for which film editor Thomas Richards should take a deep bow.

### FINGERS AT THE WINDOW

Metro-Goldwyn-Mayer Production.

Directors of Photography: Harry Stradling, A.S.C., and Charles Lawton, A.S.C.

This entertaining (if unpretentious) "whodunit" is a fine example of the injustice of switching cinematographers in the middle of a production. Its photographic direction is credited jointly to two men. Parts of it are excellent, and parts of it are decidedly inferior, one hardly knows which of the two to blame, and which to praise. The true blame should probably rest with the executives who changed photographic horses midstream.

In any mystery picture, melodramatic low-key effect-lightings may be expected to figure prominently. They do in this case, and usually to good dramatic and pictorial effect. However, there are some sequences in which—especially in the long-shots—the personal lightings seem definitely sacrificed to the overall effect, with the result that faces go unnecessarily muddy. Both the lighting and the make-up employed on Lew Ayres through most of the picture could also have been improved considerably. However, the picture is sufficiently entertaining that these minor flaws hardly hurt it.

### PARIS CALLING

Universal Production.

Director of Photography: Milton R. Krasner, A.S.C.

In photographing "Paris Calling," Director of Photography Krasner seems to have done the best he could in what was an obviously difficult situation. The story and casting both conspire to give a somewhat synthetic atmosphere to the picture. Then he faced the problem of doing a picture which essentially demanded rather vigorous, melodramatic photography yet with a star who needs considerable diffusion of both lens and lighting to preserve the illusion of youth.

Viewed as a collection of individual scenes, and especially in the light of these restricting circumstances, Krasner's work is individually good. He exhibits a really fine flair for effective composition, and his effect-lightings are

excellent. But viewed as a coherent production, "Paris Calling" is not so pleasing. To say the least, it is disconcerting to see scenes of Miss Bergner—diffused as heavily as any cinematographer would dare today—intercut with reverse-angle shots of the other players so crisp and harsh they might almost have been cut from "Citizen Kane."

The fault, we would say, was probably not so much Krasner's as that of the executives who seem to have demanded "modern" photography without consideration of the photographic limitations of their star.

### JOHNNY EAGER

Metro-Goldwyn-Mayer Production.

Director of Photography: Harold Rosson, A.S.C.

If you see the name Hal Rosson, A.S.C., on a picture, you can be pretty reasonably sure the picture that follows the credit-title is going to be an example of fine photography. "Johnny Eager" is no exception to this rule. It doesn't, perhaps, offer him quite the scope of some others, such as "Boom Town" and "Honky Tonk," but he handles everything that the story offers with that deceptively effortless ease which only accompanies really high photographic skill.

It would be interesting, indeed, to analyze the part photography has played in the development of Robert Taylor from his unfortunate beginning as an over-publicized "pretty boy" to his present stature as an established actor. It's considerable, obviously. The present picture highlights this, for it gives Rosson an opportunity to present the star very extensively by means of character and effect-lightings, which definitely strengthen the ruggedness of his characterization.

### Movie Clubs

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has now been completed, and the Club premiere is expected to be held at the April 15th meeting.

PRUDENCE BRAKLOW, Secretary.

### Philadelphia Elects

At the March meeting of the Philadelphia Cinema Club the annual election of officers was held and the following were chosen: President, George A. Pittman; Vice President, C. Harold Mooch; Secretary, Robert R. Henderson; Treasurer, Herbert L. Tindall, Jr.

Boyd Barnard, who won first prize in the annual contest, in a very fine spirit returned the money he was awarded, to be donated by the Club to the Red Cross. The Club by unanimous vote donated a substantial additional sum from the treasury. James R. Maucher and Dr. Robert E. Haentze showed a very excellent and entertaining film on "Colonial Williamsburg." Dr. Haentze, who has taken quite a number of pictures of animal life, showed very unusual movies of animals, birds and snakes with numerous close-ups in his film entitled "New York Zoological Gardens." John

A. Crap exhibited his film on "East River Drive" (Fairmount Park, Philadelphia, Pa.) and Mrs. Frances H. Hirst showed a short but excellent film on flowers, entitled "Over the Garden Gate."

ROBERT R. HENDERSON, Secy.

### Tri-City Follows "De Soto Trail"

The Tri-City Cinema Club met in Moline, March 19th. Seventy members and friends were present. In the absence of President Raymond Schmidt, (Davenport), John Hoffman, first vice-president, (Moline), presided.

The outstanding feature of the program was the projection of twelve hundred feet of 16mm. Kodachrome by Harry J. Lytle, of Davenport, Ia. He called his film the "De Soto Trail," and followed the route of the famous explorer from Cuba through the scenic points of Florida, the Carolinas, Mississippi, and Louisiana. J. P. Horton, of the Victor Animatograph Corporation of Davenport, Iowa, talked on the "History of Victor Equipment," and showed cameras and projectors from 1910 to the present development.

The Annual Prize Contest for the best movie will be held in June. John Hoffman (Moline), Dr. James Dunn (Davenport), and Dr. Albert N. Mueller (Rock Island), are the committee in charge. The entries are limited to four hundred feet in 16mm. and two hundred feet in 8mm.

GEORGIA T. FIRST, Secy.-Treas.

### Metropolitans See "Usher"

Under the chairmanship of the genial Joseph Hollywood, New York's Metropolitan Motion Picture Club had the privilege of screening "The Fall of the House of Usher," the first great amateur movie, produced some fifteen years ago by Dr. J. Sibly Watson, Jr., A.S.C. This picture was also the first American-made impressionistic film, following the lead of the professionally-produced "Cabinet of Dr. Caligari," made in Germany by Karl Freund, A.S.C. Second on the program was one of 1941's top documentaries, "Singing Shadows," 16mm. Kodachrome film by Herman Bartel. The 8mm. prize-winner, "Auntie in Moccasins," by Joseph L. Harley, of Tenafly, N. J., concluded the program.

FRANK E. GUNNELL.

### All-color Show for S.F. Cinema

The March meeting of the Cinema Club of San Francisco turned out to be a Kodachrome evening. First screening of the meeting was Walter Darmstadt's 16mm. Kodachrome record of a young couple starting their honeymoon. The film is cleverly titled and chock-full of human interest. Attesting to Filmer Darmstadt's skill in composition are the nicely-framed vistas of the Canadian country seen in his "Yesterday's Memories." Past-President Smurr exhibited a tricky 16mm. Kodachrome film entitled "Christmas, 1941," into which he spilled



the whole bag of cinematographic tricks, including multiple-exposure, mask-shots, split-screen, and so on. C. D. Hudson projected a selection of Kodachrome slides, and "Go North where the World is Young," a 16mm. Kodachrome by Rudy Miller, wound up the evening's entertainment. This ambitious film, depicting a trip through Alaska, had the audience gasping at the sheer beauty of many of the scenes.

L. J. DUGGAN, Secretary.

## Poets in Indianapolis

Following the tradition laid down by James Whitcomb Riley and the other famed Indiana poets, two members of the Indianapolis Amateur Movie Club went amazingly lyrical. Dr. Joe Sovine, Chairman, sent out his invitation in clever verse, and drew an equally clever reply from fellow-medico Dr. L. E. Foltz. Dr. Sovine's meeting was highlighted by a demonstration of focal length, conjugate foci, effects of diaphragms, and spherical and chromatic aberrations. The demonstration was made with a gadget consisting of a board about four feet long with a F&R spot fixed at one end, a screen at the other, and a movable reading-glass between the two. Placing a tin can over the spotlight, with a Kodachrome transparency in it, the effect of diaphragms was shown by placing pieces of cardboard with holes of different sizes over the lens to show the correction given the projected image by stopping the lens down.

The February meeting was at the home of W. W. Locey, and included the screening of a 200-foot vacation picture processed and edited on location. "There Goes the Mail," a documentary showing how our mail is handled, was also shown. Mr. Locey's technical program was of the quiz variety. He had each member bring two technical questions to the meeting, and then appointed a board of three alleged experts from among the more experienced members (Dr. Sovine, Mr. Tremblay and Mr. Culbertson) to answer the questions. The board was given a chance to answer the questions; if none volunteered, one was drafted, and if none of the three could answer, it was left up to the membership to provide an answer. This system worked out very well.

ELMER M. CULBERTSON.

## Triangle Cinema Member Wins Honors

The Triangle Cinema League of Chicago is happy to announce that one of its officers has won new honors in the movie-making field. Vice-President H. S. Gould captured seventh place in the recent Chicago Cinema Club-Esquire Theatre Amateur Movie Contest. The film was "Opened Before Christmas," an unusual live action-marionette 16mm. fantasy which uses both black-and-white and Kodachrome, and special recordings for the sound accompaniment. Mr. Gould, incidentally, is planning to make further

films using puppets, and would greatly appreciate hearing from any other amateurs who have had similar experience filming marionettes. He may be reached care of the Club's Secretary, at 1528 Harding Ave., Chicago.

LEO BROOKS, Secretary.

## Equipment Trucks

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studio's light tractors. A suitable coupling is mounted at the rear, so that several units may be towed one behind the other.

The body of the truck is a sturdy metal locker. On the right-hand side is the main cine-equipment compartment. As will be seen from the illustrations, this provides space for storing a complete Mitchell BNC camera outfit, complete with tripod-head, six 1000-foot magazines, sync and "wild" motors, cables, and all accessories. Three drawers provide places for the regular and spare finders, lenses, filters, diffusion equipment, and other accessories including regular and wide-angle matte-boxes. Each component fits solidly into its place, so that there is no danger that it will move or shift and become damaged in transporting the truck from place to place.

When moving simply from one stage to another, the shelf upon which the BNC's magazine-cover usually rests can be folded upward, and the camera put into place without removing the magazines or their cover. The shelf upon which the camera is carried slides outward on a ball-bearing track and, it may be mentioned, is sufficiently strong so that a heavy man may stand on it without damaging it. The top of the truck is fitted with wooden planking, so that it may, if necessary, be used by either the camera or still crew as an emergency low parallel.

At the rear is a locker for the Still-man's equipment. Space is provided for his 8x10 view camera, his 4x5 Graphic outfit (in its case) plateholders, flash-synchronizers, flashbulbs, and similar accessories.

On the left-hand side is a utility locker in which cine and still tripods are kept, and room is provided for such bulky accessories as battery-cases, and the like. Where necessary, extra magazine-cases, or even a complete standard Mitchell camera, in its cases, may be stowed here.

In the front end, at the right side, is a small additional locker. In this are provided hangers for the coats, etc., of the camera crew, and a space for slates, and the like.

Locks are fitted to the doors of each compartment. As a rule, the Assistant Cameraman is supplied with one key, the Still-man with another. The Assistant's key will open the cine-camera locker, the utility locker and the coat-locker, but will not open the still-camera locker. The Still-man's key will open the locker in which his equipment is

kept, the utility-locker and the coat-locker, but will not open the cine-camera locker. This assures that only the men directly concerned will have access to the equipment kept in any of these compartments.

When additional film is needed during the day by a company, it is brought to the stage in a motor-glide equipped with a specially-fitted sidecar with compartments designed to hold the 1000-foot magazines. When extra cameras, blimps, and so on are required, they can be transported in a special, open trailer with a weatherproof "covered wagon" tarpaulin roof, which may also be hauled behind the department's tractorette.

Though this equipment has only been in use a comparatively short time, it has already contributed greatly to the efficiency of the camera department's operations, and to the convenience and certainty with which the production crews on set or location can work. END.

## Home Movie Reviews

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ly 200 feet could be removed without in the least impairing the general-interest travelogue. It would, in fact, really strengthen it.

## ALL WOOL AND TWO YARDS WIDE

Industrial-documentary, 150 feet, 8mm. Kodachrome.

Filmed by John Huefner and Don Dillingham.

A creditable amateur-made commercial film, illustrating the making of fine woolen blankets, from the virgin wool to the completed blanket. The subject-matter is covered quite thoroughly, and the photographic technique is generally good.

The main criticism we can offer is that there is a very serious lack of explanatory titles. It is all very well to confine a title to the simple statement "Carding:" but the average audience wants to know just what this process does. In other instances, operations are shown with no explanation, leaving the viewer to wonder why the freshly-woven blanket is, for example, passed over rollers under a stream of running water, and so on. This could easily be remedied with more explanatory titles. Some of the basic processes, like carding, spinning, and perhaps weaving, could also be made more clear by a few added shots of the simplest, "homespun" versions of the same operations.

## Conservation

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ionally, a hen will return to the submerged nest to build another and lay her eggs, resuming her maternal duties. Whenever the photographer discovers such a setup, he has a sequence worth recording for posterity, and one which will brighten any conservation movie.

Ducklings emerging from their eggs furnishes a pleasing sidelight. Filming



the procedure will take much longer than you expect, and you will soon discover that you cannot run your camera continuously. Then, too, exposing a foot or two of film at regular intervals only tends to give a choppy effect. If your camera is equipped for fading and dissolving, you can smooth out the sequence nicely. Or change your camera angle or distance from time to time.

Your final close-up might be a wet-feathered youngster wallowing over the nest to get his first glimpse of sunlight. In filming such nests, tie back but do not cut away any offending cover which might cast objectionable shadows over the nest. When you are through, release the cover to protect the nest and its young from predators.

Predators do play a big part in any conservation movie. It has been found that the Franklin ground squirrel, an apparently harmless little fellow, actually destroys some 7½ million potential ducks every year. For the 1940 DU film, I had the good fortune to photograph on the south end of Lake Manitoba a gangster squirrel actually raiding a waterfowl nest. The sequence shows him rolling out the egg, grasping it between fore and hind legs, and bringing down his sharp incisors to crush the shell.

Magpies and crows also spell death to duck populations. One of the highlights of the DU film was a color shot of a crow actually devouring a duck egg, while squatting on the edge of the nest, and killing and eating a baby duckling along the shore of a lake. Such spectacles are often seen afield, but rarely filmed.

Perhaps it may be necessary to rely on charts or animated maps to unfold a part of your conservation story. To picture the drop in duck populations from 1850 to 1934, DU's artist prepared a large title-card, on the right side of which were laid 400 duck silhouettes (each silhouette representing one million ducks). On the left side, the respective dates and populations were lettered on cardboard strips.

Thus, by giving single-frame exposures for each duck removed, and changing dates and population figures, it was possible to chart the decline graphically. Dissolves were used to smooth out the transition between dates.

Animated drawings are easily handled and often furnish a chuckle. To show that at one time ducks and duck-hunting were on the way out, this same DU artist painted a typical hunter, duck and dog, each cut from cardboard with limbs hinged to move freely. These were placed on a painted marsh background and laid on the floor, the camera being mounted overhead to shoot down vertically.

One person manipulated the hunter, another the duck, and still another the dog. The idea was to show the trio, disgruntled and discouraged, walking from left to right across the frame. By

moving each limb a small fraction of an inch, exposing two frames for each motion, forward animation was thus obtained.

For a final touch, a dozen golden suns were cut from cardboard, and on each was painted a face growing progressively sadder. As the trio lumbers along, the sun loses its smile and begins to set, hitting the horizon, bouncing up again and slowly sliding down beneath the horizon-line in normal fashion. Although the horizon was only a painted line, the impression of a setting sun was secured by cutting off a small portion of the base of the sun each time a frame was exposed, until the whole orb itself had disappeared.

If you plan to work into your film a map on which lettering will appear, save your map for further use by lettering on transparent celluloid placed over the map itself. To animate a line showing, for instance, the fall and rise in wild-life populations, lay out the inked sketch in full on the celluloid surface. Mount the camera so that it will shoot downward, but invert the map. This is the same as inverting the camera for an upside-down effect.

With a pen-knife, scrape off a tiny portion of the inked line or the lettering, exposing frame by frame, until the whole surface is cleared. When the film is processed, cut out the sequence, reserve it end-for-end, and you will see the lines and lettering magically taking form. This is more satisfactory than simply drawing or lettering as you shoot.

If possible, give your conservation film a timely tieup. The current Ducks Unlimited movie, which will be released about the time this article sees print, is titled, "In Defense of Ducks," working in perfectly with the war angle. Cut into the film are brief glimpses of actual warfare from captured enemy film, loaned to DU by the Canadian government, and the parallel here is to show that even as man has enemies in his civilization, so ducks suffer from predators, piscatorial subs and endless blitzes.

Naturally, any conservation film that shows the destructive forces must also depict the constructive things. Where drought hampers ducks, reveal how the construction of dams has restored former water-levels. Bring in the townspeople who cooperate by salvaging sick ducks and transporting them to fresh water.

Where fire once caused great destruction, picture how education of farmers in proper farmland burning methods saves thousands of nests annually. If necessary, stage an actual fire scene—spotting the fire, telephoning for aid, fighting the blaze. At one filming location in northern Alberta, remote from electricity and photoflood lighting, an "interior" of a fire warden phoning for help was obtained by yanking the telephone out of the dark cabin interior and mounting it on an outside log wall,

where the subject could be properly lighted.

Conservation films are alive with marvelous filming possibilities. If you are really ambitious, make a list of all the birds or animals in your state, and set about religiously to film them. Or take one species and follow through with a film story of its life history from birth to death. Or make a color close-up study of the various species of ducks in the water and in the air, since too few hunters can identify even protected species when in flight over a blind.

Shooting for conservation will put an end to haphazard, purposeless filming. Such filming will not only add to your storehouse of information, but tax your ingenuity, for these furred, feathered and finny fellows often turn out to be more temperamental actors than you ever imagined! **END.**

## Auricon Camera

(Continued from Page 165)

ning characteristics. Therefore a considerably smaller and higher-speed (1800 RPM) synchronous motor with better operating characteristics is employed to drive the camera-mechanism, and a separate, non-synchronous motor is used to power the take-up, governed by the smaller main-driving unit. The main drive is through the same vibration-damping "floating drive" system employed in the Auricon recorder, and the take-up of course through an automatic friction-clutch.

The sturdy recording galvanometer is essentially the same type as that used in the Auricon recorder, though differing in details of design and mounting. It is usually rugged; it will take very considerable overloads—including even gunshots—without harm or annoying centerline shift. All adjustments to the recording optical system are carefully made at the factory, and locked permanently in position. The frequency-response of this variable-area recording unit is stated to be greater than the reproducing range of most commercially-available 16mm. sound projectors now in use. A noise-reduction circuit is fitted.

The amplifier is a separate unit, and is identical with that used with the Auricon recorder. It makes use of the same types of batteries and low-drain tubes used in most portable radios, and therefore available almost anywhere.

Exposure of the sound-track is controlled by a rheostat and ammeter on the amplifier panel. A switch on this panel also checks the condition of the batteries. Volume is easily adjusted by the controls provided for the two input channels, and is shown by a second meter known as the Volume Indicator. The sound being recorded is also heard through the monitoring headphones. Indications are provided for the correct exposure-settings for the various types of film-stock most likely to be used.

The camera's 200-foot film-capacity (using standard daylight-loading spools) matches that of the Auricon recorder, and gives 5½ minutes of uninterrupted



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operation if scenes of such length are desired. Any type of 16mm. film may be used, including black-and-white reversal or negative emulsions, or Kodachrome. Single-perforated sound stock must of course be used.

The Auricon camera is equipped with a single-lens mount, designed to accept any "Type C" lens-mount. Therefore lenses from most Filmo 70, Bolex or Victor cameras may be interchanged with the Auricon sound-camera. Lenses for the Cine-Kodak Special and Leica may also be employed by use of the "Type C" adapters made by their respective manufacturers.

The finder used on the Auricon camera is almost absurdly simple, yet is one of the most accurate made. By use of this open-frame type finder, not only are precision optical units conserved for other, more vital uses, but many operating advantages are secured. Framing is stated to be unusually accurate, because with this "iconometer" open-frame finder a larger image is seen, and with exactly the same illumination seen visually without the finder. All objects appear as large as though no finder were being used—a distinct advantage in making sure the comparatively small microphone is not inadvertently included in the field. The image is also upright and laterally correct. Parallax correction is obtained by means of lateral adjustment of the rear eyepiece along a calibrated slide, and the forward frame is fitted to take cut-out mattes of colored celluloid, professional-style, to match the field of longer-focus lenses.

Designer Eric M. Berndt, who is perhaps the outstanding pioneer in 16mm. sound-on-film, has some interesting comments to make on his reasons for simplifying the camera's design as he has, and for employing electric motor instead of spring drive. "The problem in recording sound," he says, "is to obtain perfectly smooth motion of the film past the recording aperture. It is also necessary, in order to maintain correct pitch in the recording, that the film move uniformly at the rate of 24 frames per second (36 feet per minute in 16 mm.), which is the world-wide standard for correct reproduction on sound-on-film projectors of any make.

"Obviously, it is not practical to record sound during the time the camera is slowing down, when it is starting up, during the making of a lap-dissolve, or when shooting above or below normal speed for any special effect such as slow-motion. Many spring-driven cameras have means of running at various speeds, back-cranking, etc., for making these special photographic effects. Frankly, for such special purposes they are much better than any sound-camera can be. That, I think, is well shown by the fact that in professional practice scenes requiring other than normal speed are invariably shot "wild"—that is, without direct-recorded sound—and dissolves, etc., are put in by after-treatment.

"Moreover, a spring drive is not absolutely constant, even from the picture viewpoint. As any user of a spring-

driven camera has probably noticed, the speed varies to some extent, depending on the camera involved, between its fully-wound, partially-wound and almost-unwound conditions. Also, the gears in most spring-driven cameras do not provide steady enough motion for sound-recording purposes. And the spring has to be rewound every 20 or 30 feet, which is at the least a limitation when dialog scenes are considered.

"From all of this it should be evident that the first and foremost consideration in building a sound-camera should be to eliminate those things which will affect the recording of good sound, and which can be handled as well or better by ordinary spring-driven cameras. It will be noted, incidentally, that in all instances where existing spring-driven cameras such as the Cine-Special and the Filmo 70 are used for synchronized sound-recording by double-system methods, the spring-drive is bypassed and an electric motor drive substituted.

"The Auricon camera is therefore driven by a synchronous motor which keeps it operating always at a constant speed of 24 frames per second and completely eliminates stopping for rewinding. The 200-foot daylight-loading capacity, together with this electric motor drive, permits running the whole 200 feet through at a single 'take', giving a full 5½-minute scene if desired. The motor regularly supplied operates from the 60-cycle, 110-volt current generally available. Where necessary, 50-cycle motors can be supplied, and for field use, the unit may be driven from the battery-powered Auricon portable power-unit, which will supply power for two full hours shooting, or several thousand feet of recording, and may be recharged overnight from any 110-volt line.

"Since the motor-drive is of the synchronous type, the camera may be used for double-system recording with the Auricon recorder or any similarly-powered unit. The Auricon amplifier may be used with the Auricon camera, and vice-versa. Thus if one purchases an Auricon camera-outfit, and later wants to change to double-system recording, it is only necessary to obtain an Auricon recorder, and operate the two together. Conversely, if one already has an Auricon recorder and its amplifier, and either has no synchronous-driven camera-equipment for 'sync' recording, or wishes to make single-system recordings for field use, it is only necessary to obtain an Auricon camera and use it with his existing Auricon amplifier."

In developing this simplified and remarkably practical 16mm. sound-camera, Berndt has certainly advanced the cause of direct 16mm. sound-filming by either professionals or advanced amateurs fully as much as he did nearly two years ago when he introduced the sensational Auricon recorder. And, as we remarked at the start, this new unit makes its appearance at precisely the moment when it can be most useful in the making of civil defense and training films by both professionals and advanced amateurs. END.

## Amateur Gadget Aids Defense

(Continued from Page 164)

followed. The film—and its message—were saved.

When the film returned from the processing station, it was found that it reported for that flier who gave his life for World Freedom. It reported for him even more fully than he could, for it told what happened even after he could no longer observe. Everything from the start of the dive to the second of the crash was recorded on that film!

Much of the story that film told is highly technical, and a military secret, as well. But this much can be told. The photographed readings of the plane's instruments told the engineers and government investigators all that happened during that fateful dive. They revealed the speeds and stresses that made that wing break—facts which enabled the designers to make newer models of the plane stronger and safer. And they told why the pilot failed to take to his parachute. He couldn't: for as the wing snapped, the pilot was knocked unconscious. Yet the camera kept grinding till the last second, its unerring mechanical eye recording data of incalculable value.

The Federal Aeronautic Authorities have stated that this film is the most valuable one of its kind ever made. It points the way, too, to the value of the magazine-type 16mm. camera for hazardous jobs of this kind, for even though plane and camera were demolished, the magazine survived the crash, and brought its priceless record to aid in making America's planes better. And cinefilmer Dudley Porter, who designed and built the control which kept the camera grinding despite all the shocks and strains those fateful last moments brought, can well be proud of his contribution to America's War Effort. So, too, can the fellowship of home movie gadgeteers, that their phase of the filming hobby should serve Democracy so signally! END.

## Defense Film Diary

(Continued from Page 162)

day of shooting. We allowed ourselves six weeks to make the picture and planned our shooting on Sundays and one or two evenings during the week.

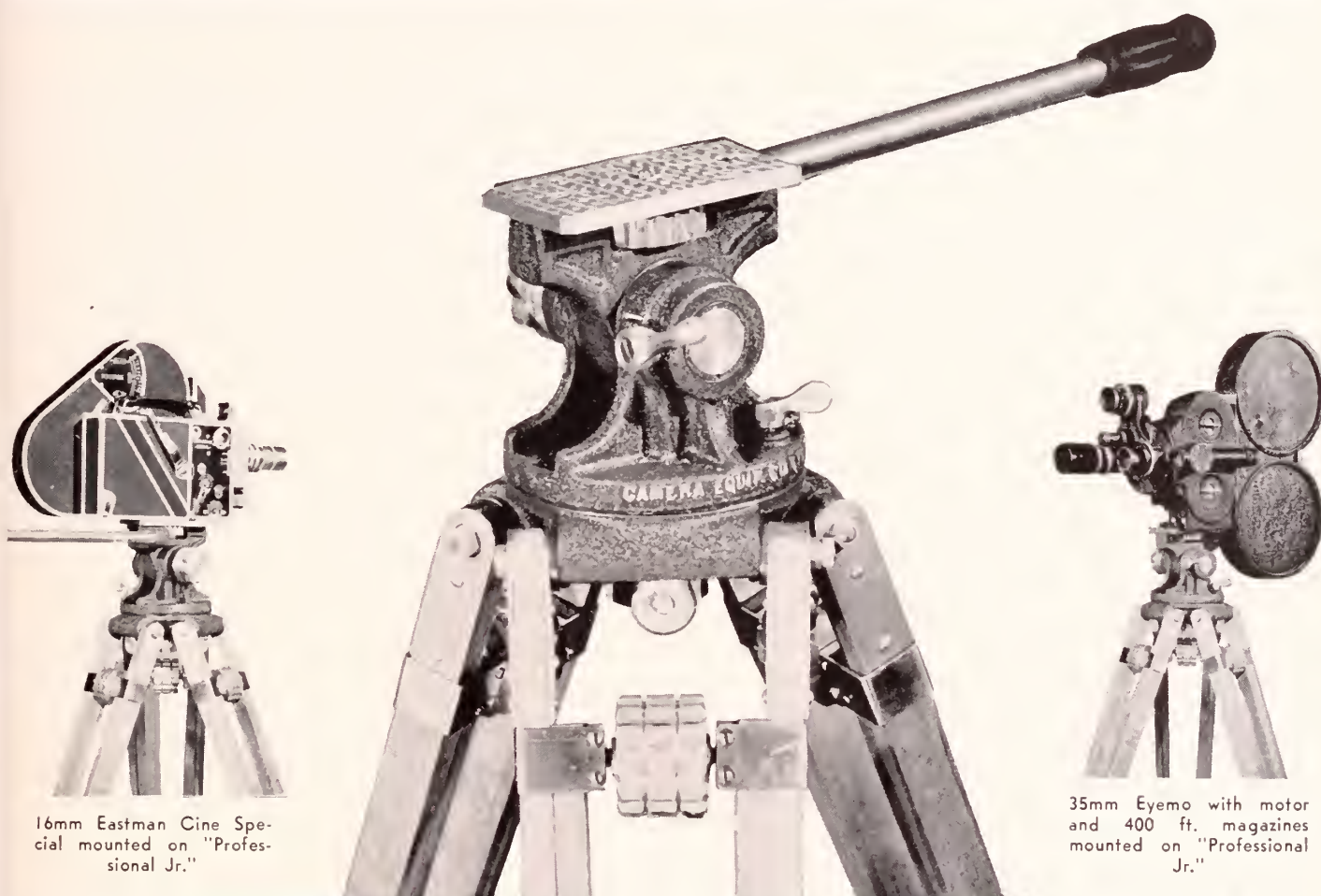
A Ciné-Special and two Victor Fives were chosen, after testing for frame-lines to be sure pictures on all three could be matched. Enough film was planned on to make two pictures, one silent and one sound. Our twelve committee members had been organized into special groups and were really going into action.

Our chairman and coordinator, Midge Caldwell, made all contacts and took care of all special business. Our Director, Ray Fosholdt had been busy trying



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to find a young actress for our picture who had looks, acting ability and enough physical stamina to climb ladders, ascend roofs and not be afraid of bombs.

Chief Evans was made technical adviser and co-star. Clarence Aldrich was made Chief Cameraman. Val Pope took charge of camera No. 2 and also directed all lighting, with Harold O'Neal, Earl Everley and Chick Morey working under him. Myron West, Carl Weldin and Earl Everly were in charge of properties; Ted Phillips chief electrician and Julian Hiatt, Jack Nicholson and Harold O'Neal in charge of publicity stills.

A beauty parlor with an overhanging balcony was our first set. We arrived to find the lighting crew had been there for hours and had a scaffolding set up with all the lights you could wish for hung on it, not to mention some baby kegs for which our ingenious chairman had made a special trip to Hollywood.

Our cast, which consisted of four gossiping women, arrived at one in the afternoon and work really began. By 7 o'clock we were tired, dirty but happy, for  $\frac{2}{3}$  of the scenes scheduled for that day had been taken. We trooped out for coffee and were back in twenty minutes to start again.

By ten we were finished—but you should have seen the beauty parlor! A very opportune time indeed for the owner, Mrs. Burton Skiles to come by! From the look on her face she must have thought it would take two days to remove all the equipment, which included a dolly and several feet of track for it to ride on. It had been built by our two very ardent admirers of dolly-shots, Val Pope and Harold O'Neal, and is a neat bit of equipment to use in a scene.

The bed of the dolly is made out of 5-ply wood fixed to a framework of 2 x 2 hardwood secured by carriage bolts at intervals around the frame. It has 4-inch hard-rubber wheels, a handle for pulling and pushing, and a little rail around the top. There is 65 feet of track for it in 10-ft. lengths made of 2 x 4's with a side guide rail. Segments of this track are joined with a diagonal cut overlapping in such a way that there is no jolt as the dolly passes over joint. Each joint is fastened with a 6-inch carriage bolt, and the sections of track are easily assembled.

One of our members offered his vacant lot for our next location. The following Saturday the lucky ones who didn't have to work at their respective jobs were allowed to build a set for the roof scene, and a parallel to shoot it from.

The next morning, our three cameras were placed at vantage points about this quickly-built set to film the scene of a bomb dropping through a roof and a young housewife doing all the correct things to combat it. One of our cameras took close-ups while the other two covered medium and long shots.

Miss Mary Ann Purdy, our leading lady, ascended the roof and knelt down with a hatchet. *Pfft* went her silk hose! There was a brief but enjoyable delay while she took them off. Her nice white knees began to turn red from the rough

roof and by the time the sun said "that's all for Kodachrome," the poor girl's legs looked as though they had been between nutmeg graters. Not one word out of her though, for she certainly was a real trouper! Before the picture was finished we realized how lucky we were to have a durable instead of fragile leading lady!

Finally came the scene for the magnesium to be sprayed with water. We were only able to procure one real bomb, so for all scenes except our most important one we substituted scrap magnesium and a nose and tail piece of a dummy bomb. Once alight, it worked just as well.

Everyone was a bit warm under the collar, for we wanted our "big scenes" to go just right; retakes were out of the question.

Everything was going smoothly when she turned the nozzle on for the spray. The wind, the magnesium and the pressure in the hose cooled everyone off in a hurry. The dripping cameramen wrung themselves and their cameras out, called it a day and went home with their fingers crossed.

The next Thursday evening we set out to film the PBX and control board at the Fire Dispatcher's office. Everyone left word at home they would be back in a couple of hours as this was "just a simple shot." A little kidding went on as to when they were going to have their next fire while we set up our cameras. Lo and behold there came an alarm. It was a big fire—the Navy Hospital! Our scene was forgotten. We grabbed up the cameras and followed the hook-and-ladder, entertaining visions of choice scenes of a really big fire, which would fit into the picture somewhere.

Scattering to find a good camera angle, we were soon doomed for disappointment, for special police informed us that cameras were banned.

We returned to the car before we noticed one of our group was missing. Midre Caldwell was nowhere in sight and no trace of her or her camera could we find.

Suddenly it dawned on us and we went over to one of the policemen. Yes, they had taken cameras away from several who had slipped inside and taken them down to jail for questioning . . . thirty minutes later we picked up our now very quiet and subdued camera pal and returned to get our original scene. We trudged home very much later that evening, but some of us were a little bit wiser.

Our next location was a deserted house over on the other side of the channel which was going to be moved. This was our big scene. Our real bomb was going to be used and everything had to be letter-perfect.

Carl Weldin and his crew worked one evening and part of the next, papering and furnishing one corner of a big room and faking a window. Props were a little hard to get when they were to be damaged by fire, but finally a social service organization, Goodwill Indus-

tries, furnished us with a rug, chair and two small tables, and the Ellis Paint Co. gave us the wallpaper. We were proud of the set when it was done and a little more so when the audience of youngsters hanging in the windows informed us it looked better than their bedrooms at home.

We used blue photofloods to give us our daylight effect, and it really taxed us to cover this large set for although they are given the same rating as ordinary floods, we had found it takes more of them.

At 8 o'clock Engine No. 13 dropped by "just in case." Our leading lady began to get a little jittery as she eyed the real bomb. By this time, the fire apparatus outside had attracted the major part of the neighborhood and we soon had a fire-thirsty audience eagerly looking on. You could hear whispers of "A real magnesium bomb!" circulating through the crowd.

If practice makes perfect it was surely so that night, for our actress was nearly exhausted just from rehearsing, before we were ready to start actual shooting! Our nerves began to wear to a razor's edge just from the thought of having only one bomb to work with and not knowing what reactions to expect from it. We checked and rechecked the props, lighting, action, cameras and exposure.

Finally we were ready. There were firemen at each door with live hose and one near the set with an extinguisher. The crowd outside was on its collective toes, their eyes glued to the long metal bomb on the rug. It gave a couple of little sputters and then a boom and a glaring flash filled the room with smoke and fine ashes. The spectators practically left their shoes!

The cameras, one at the end of the room, one at the side and one in the rafters, were grinding away. Mary Ann was spraying the burning curtains with a really determined and grim look on her face for she knew she had to fight the bomb alone unless something very unexpected happened. After putting the blazing curtains out, she brought in her pail of sand and a shovel. As she covered the bomb with sand everyone thought it must be out but the minute she went to shovel it into the pail it spurted into a bright flame again.

She began to work a little faster and thought the remaining parts were stubborn, by working carefully and following the calm voice of her director, the scene was completed without a slip. As the crowd began to depart, we pulled our third cameraman down from the smoke-filled rafters and began to revive him, while the leading lady fell exhausted across what was left of the bed.

We had as visitors on the set that night, William Stull, A.S.C., Editor of *AMERICAN CINEMATOGRAPHER*, and Andrew Boone of "Popular Science," who congratulated our Director, Ray Fosholdt, for the calm way in which he directed the scene and our leading lady, Miss Purdy, for being a real trouper and giving a fine performance.

I didn't have to drive out to location



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the next Sunday. It was my home. I looked on meekly as cameras, tripods, lights, ladders and pails of sand and magnesium began to roll in. With equipment from one end of the house to the other and the lunch basket firmly planted on the breakfast table, the filmers began their work.

Square-nosed shovels, an axe and the correct equipment stole the scenes for awhile. Before our leading lady started to climb the high ladder a strong wind sprung up and for awhile we thought we might have to delay that scene! After that, we shot interior scenes in the living room, hall and bathroom and at 9 o'clock we called it a day and had lunch and beer.

Our shooting schedule is over but now the editing really is something. The entire picture was shot in Kodachrome and we have had a black-and-white work print made of it to edit first in order to keep from damaging the original. After the editing is completed and before the sound is added, the narration and picture will be checked by the proper authorities. We have ten more days in which to finish it within the time we allotted ourselves. Enjoy it? I'll say we did! If you really want an experience, just make a picture on "Incendiary Bombs!"

P.S. What did we learn? The first thing we all learned was if magnesium bombs are taken care of right away there is really nothing to fear. Because some of our scenes were taken of Fire and Police officials, PBX Boards and various Civic organizations, we learned how they function.

We found out it's the bunk to try and conserve film if you want to make a good picture. You can't stay on a budget; we were about 1/3 through the picture when we stopped watching the footage indicator and started digging into the Club Treasury and our own pockets too. The Club may not be getting some of the new equipment it was planning on and maybe we'll be wearing this year's suit next year—but one thing we know is that we'll have a picture we're proud of. It was also a constant revelation to find public officials and various organizations so cooperative in helping us make a picture for our country. END.

## Defense Script

(Continued from Page 163)

Scene 20: Medium-shot of bomb burning.

*Narration:* "Here's what would happen if you should throw a pan of water on a magnesium bomb while it is burning. As you see, a violent explosion takes place throwing fire as far as 20 to 30 feet. You can easily imagine what would happen if this occurred in your home."

Scene 21: Medium-shot of bomb burning. Fire Official with hose using stream of water.

*Sound:* "The same thing happens when a solid stream of water is turned on the burning bomb. Water can be used to control these bombs—"

Scene 22: Medium-shot of Fire Official using spray of water.

*Sound:* "—but it must be used in the form of spray. This causes the bomb to burn out in about 4 to 6 minutes and also makes it possible to control the fire the bomb has started."

Scene 23: Medium-shot of bomb burning on rug. Fire Official demonstrates proper use of sand.

*Sound:* "When using sand to control the bomb, you should have at least two 3-gal. pails of dry sand close by. Use a square-nosed shovel to sprinkle sand over bomb. Roll bomb onto the sand and scoop sand and bomb into pail in which you have left at least 4 inches of sand. Now put remaining sand over bomb in pail and carry it outside on the ground or cement where it can do no harm."

Scene 24: Close-up of Mrs. Ann saying: "I should worry, I have a fire station right across the street."

Scene 25: Close-up of Fire Official saying: "During an air raid you are your own fireman. Don't contact the fire department either by phone or alarm box. In times of a raid the fire department must take care of the industries that are making tools of war to help protect you."

Scene 26: Montage shot of Dispatcher's Office, PBX board, air warden, ambulance driver, police and fire officials calling, fire station gong ringing, engine rushing out.

*Narrator:* "See how impossible it would be for the Fire Dept. to answer individual calls. If the fire gets out of control, your air-raid warden and neighbors will help you."

Scene 27: Medium long-shot of Fire Official beside shovel, hose, sand, etc.

*Narrator:* "The necessary articles to have in your home to combat Incendiary bombs are, a garden-hose 5/8 to 3/4 inches in size, equipped with a Boston type nozzle—one that can be adjusted to a fine spray. 2 pails of dry sand of at least 3 gal. capacity, a sharp hatchet, one the size a woman can handle; a long-handled square-nosed shovel and a ladder of sufficient length to reach any portion of your home."

Scene 28: Close-ups of necessary articles to be cut in Scene 27.

*Narrator:* "At first sign of an air-raid, fill the bath tub and all available receptacles with water."

Scene 29: Close-up montage shots of bath tub and receptacles being filled with water.

Scene 30: Medium Long-shot of rubbish and magazines being cleaned out of attic.

*Narrator:* "Clean out your attics and remove all rubbish from around your house."

Scene 31: Medium Long-shot of rubbish being removed from around house and garage.

Scene 32: Close-up of Fire Official saying: "Let's suppose there is an actual air-raid—"

Scene 33: Medium Close-up of Mrs. Ann

in living room reading. Hears sirens.

*Narrator:* "Yes, that's an air-raid signal."

Scene 34: Medium Close-up of sirens with steam coming out five times.

Scene 35: Medium Close-up of Mrs. Ann looking startled, turns and looks out of window then leaves room in a hurry.

*Narrator:* "Remember! Fill the bath tub and other receptacles with water in case of water shortage."

Scene 36: Close-up of bath-tub being filled with water.

Scene 37: Medium Close-up of Mrs. Ann looking up from tub or sink, startled as she hears thud on roof.

*Narrator:* "Did you hear that? A bomb has fallen on your house. You better hurry and find it."

Scene 38: Medium Long-shot of Mrs. Ann running down the hall and looking into the rooms.

Scene 39: Medium Close-up of bomb burning in bedroom.

Scene 40: Close-up of her registering consternation.

Scene 41: Medium long-shot of her running back down hall for equipment.

*Narrator:* "You'll need a hose, hatchet, shovel and sand."

Scene 42: Medium-shot of her coming back down hall with equipment.

*Narrator:* "Remember to protect your face until the thermit reaction is over." (Narrator continues with proper procedure).

Scene 43: (Int. of Set 2.) Medium Close-up as she grabs a stool, crouches behind it, uses spray on curtains till fire is extinguished. She puts down hose, brings in bucket of sand and shovel. Puts 2/3 of sand on carpet near bomb, covers bomb with sand, rolls bomb over on sand to prevent it burning floor. Scoops it up, and puts it in pail.

*Narrator:* "Here comes your neighbor to help you."

Scene 44: Long-shot of neighbor running across street and entering house.

Scene 45: Mrs. Ann puts shovel handle through pail and starts to drag it out. Neighbor comes in and takes other end of shovel and they carry it out.

Scene 46: Medium-shot of women returning with hatchet and flashlight to be sure all of fire is out. Mrs. A. sits back with sigh of relief.

*Narrator:* "Now suppose the bomb had gone through the roof and lodged in the attic—"

Scene 47: Medium Long-shot of Mrs. Ann running out of side door, gets ladder from garage puts it up and starts to climb.

*Narrator:* "Don't forget the hose and hatchet." (Explains proper procedure as—)

Scene 48: Medium Long-shot as she runs back to faucet, gets hose, and turns on water, adjusting nozzle, picks up hatchet inside door and returns to ladder and starts up.

Scene 49: Medium-shot as she ascends roof and looks down at hole where bomb has lodged. Drops to knees



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and starts to chop hole larger.  
Scene 50: Medium Close-up as she enlarges hole made by bomb, turns nozzle to a fine spray and fights the fire.  
Scene 51: Medium Close-up of bomb with fine spray turned on it.  
Scene 52: Medium Long-shot of her returning down ladder after bomb has burned out. Air-raid warden comes into scene and congratulates her.  
Scene 53: Interior of Beauty Shop. Medium-shot of Fire Official and women as he finishes talking.  
Scene 54: Close-up of Mrs. K saying: "And to think how foolish we were to believe all those rumors."  
Scene 55: Close-up of Mrs. M. "From now on I'll believe only authentic information."  
Scene 56: Close-up of Fire Official saying: "America's man power is out at the front. But in this war there are two fronts. Women like you, and you, and you are fighting on the Home Front."  
Scene 57: Closing shot of a large cut-out "V". Women are marching past opening in V carrying buckets, hose, shovels, hatchets, etc.  
*Narrator:* "Keep calm. Be your own fireman! Do your part to keep the Home Front safe! Remember, it can happen here!"

THE END

(Superimposed over V)

## Arthur Miller

(Continued from Page 158)

ways. If you wanted to stay in lab work, your next promotion was to laboratory superintendent. But it was also the jumping-off place for those of us who wanted to go into camerawork.

"By this time, you'd spent anywhere from six months to a couple of years or more learning all there was to know about film and photography, so folks just naturally assumed you understood camerawork, too. A few years later, if you wanted to switch from the lab to a camera job, you'd go out as somebody's assistant. But when I finished my apprenticeship in the lab, there was no such thing as an assistant cameraman. When you landed a camera job, they simply handed you a camera—and you went out and shot a picture!"

"The Perils of Pauline" wasn't Miller's first picture, but it was very close to it. Between the thorough training he had received in Balshofer's lab, and his own inherent instinct for photography, he "made good" from the start. He soon became one of the ace cameramen of the Kaybee company and, incidentally, a member of the first professional organization of cinematographers, New York's Cinema Camera Club which, with the Static Club of California, was one of the two forerunners of the present A.S.C.

"Those," he says, "were the days! In the morning, you'd load your camera, and the whole troupe would start out, cheerfully riding the trolley-cars to

whatever location had been picked. If you needed help getting your camera-cases aboard, the actors—even the stars—would gladly lend a hand. They'd paint scenery and move props in the studio, too! At any rate, after your day's shooting, you'd all ride the trolley home, with most, or all of your picture in the film-case, with story and characterizations shot 'off the cuff', improvised as you went along. It wasn't Art—and with the biggest stellar salary around \$75 a week, you could hardly call it even a business. But we had a lot of fun making pictures in those carefree old days!"

When the "infant industry" began its trek to California, Arthur Miller, too, came West, and joined the New York Motion Picture Company at Inceville—a seaside ranch which is now an unmarked spot in the heart of one of Southern California's most exclusive seaside residential districts. From this association, he joined the Lasky Studio—forerunner of today's Paramount—where he soon teamed up with Director George Fitzmaurice, and for many years was the camera half of a partnership which turned out some of the industry's most artistically-photographed productions.

During this period, he had an assignment on which his laboratory training must have proven invaluable. In 1923 he and "Fitz" went to Rome to produce a film called "The Eternal City." On that job, he was one of the few cinematographers who had no chance either to complain that the laboratory was murdering his negative, or praise it for saving his bacon. For four days a week he photographed scenes for the picture. The other three days, the troupe rested—but Arthur worked, developing and printing the negative he had photographed! They had rented what Miller calls "an alleged film laboratory" in Rome. Before starting production, Miller washed out the plant's developing tanks, patched up their racks, installed an American printer, and turned it into a first-class film laboratory, in which all the negative for the production was successfully processed.

All told, he and "Fitz" made two trips to Europe, including one on which he visited rural England and Wales, in unconscious preparation, perhaps, for filming "How Green Was My Valley" some twenty years later. The Miller-Fitzmaurice partnership endured for many years, not only at Lasky, but later with Samuel Goldwyn, consistently turning out films of outstanding pictorial quality. In the later twenties, he became for a while part of Cecil DeMille's short-lived independent producing venture, filming, with Peverell Marley, A.S.C., "The Volga Boatman," and a number of films starring Leatrice Joy, who still remains his favorite actress. There followed brief engagements with Pathe, and with Universal.

Then, ten years ago, he was persuaded to go to the old Fox Films Studio for one picture. He has been there ever since, and judging by his performance



on "How Green Was My Valley," he is likely to be there for many years to come. He directed the photography of virtually all of the Shirley Temple pictures, in both black-and-white and Technicolor, while she was the "little princess" of the studio, and filmed most of the studio's other luminaries—including the beloved Will Rogers—as well.

His twin hobbies are horseback packing on hunting-trips, and making home movies with his 8mm. camera. On his next vacation, he plans to film an 8mm. story of a mountain-lion hunt, preferably in Kodachrome. His film-library includes many reels of candid shots, made in the studio and on location during the filming of various of his 35mm. productions, and reel upon reel of self-filmed travelogues.

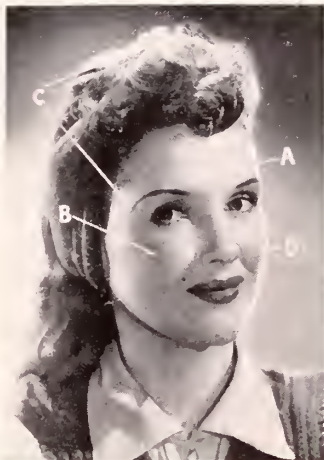
His approach to a production is characteristically studious. "Wherever I can," he says, "I like to study the script thoroughly beforehand, and figure out just what I want to get out of each scene and sequence. When we start shooting, I try, as far as conditions will let me, to realize that advance planning in the actual shooting.

"In this, the director with whom you're working, and the executives for whom you're making the picture can do a great deal to make or break the photographic job you deliver. There are directors who seem to defy you to get even decent photography—men to whom photography, good or bad, doesn't seem to mean a thing. And then there are men like John Ford, who directed "How Green Was My Valley." Ford appreciates the value of good photography, not only from a decorative standpoint, but for its dramatic value, as an aid to his own work. He'll go out of his way to help you. Working with John Ford, even on the most difficult sort of a production, is a pleasure which cannot come any too often to any of us.

"It's just the same with producers. There are some whose only idea of photography seems to be to get a crisp, recognizable image, and maybe conceal the leading lady's wrinkles and the hero's extra chins. If you try to take even a few minutes longer per scene in the interests of good camerawork, you very quickly learn their opinion of such useless foolishness!

"And then there are producers like Darryl Zanuck. I don't believe he lays any claim to being a photographer himself, but he has an instinctive appreciation of good photography and what it means to a picture. He honestly wants his pictures to be the best-photographed in the industry—and he backs this up by going far out of his way to give his cinematographers every opportunity to do outstanding work. Let one of those non-photographic directors interfere with even a single day's work—and as soon as the rushes are screened, Mr. Zanuck makes it his business to find out what's interfering with the camerawork, and correct it. He's the only producer I know who feels that retakes to improve the photography are as commendable as re-

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takes to improve direction or acting.

"He thinks pictorially to a degree that very few other producers do, or can. He has an uncanny ability of viewing the rushes, not just as isolated scenes, but as parts of a coherent whole. For instance, we had some sequences in "How Green Was My Valley" which, if you looked at them alone, were pretty drab and uninspiring examples of photography. Most producers would have thought something was badly wrong with the camerawork: but Zanuck had such a clear image of the story in his mind that he knew just how essentially that

unattractive visual mood fitted into the overall pattern Ford and I were trying to create. He even complimented us on it!

"I've only known one other producer who had such a feeling for photography. I don't think it's any coincidence that one of my picture's strongest rivals for the Award was "Sergeant York," which Sol Polito, A.S.C., photographed for Jesse Lasky.

"Zanuck's camera-mindedness makes things better for all of us out at his studio. For example, he is one of the very few producers who have ever had

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the wisdom to put at the head of their camera department an experienced cinematographer—in this case, Daniel B. Clark, A.S.C. Dan works with us and for us—and the results show on the screen in every picture. Just as an example, with Laboratory Chief Mike Leshing, he has worked out a system of coordinating our use of exposure-meters with the laboratory's excellent processing, and done it to such a degree that even on the most difficult effect-shots

the cinematographer doesn't have to worry about the laboratory. You just shoot it as you see fit: then, if you have the ability to do the job in the first place, your rushes will show up on the screen exactly what you put on the film! Granting always the requisite ability on the part of the cinematographer, a condition like that gives you confidence and a free hand to go out and really try to put better things on the screen.

"All told, making a picture like 'How Green Was My Valley' isn't any one-man job; it calls for cooperation all along the line, from the studio head right on down. With that kind of support, a Director of Photography just naturally gives the picture everything he has, and maybe a little more that he wouldn't have if he didn't feel so strongly that everyone was trying so hard to help him turn out better work!" END.

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## Professional 16's

(Continued from Page 157)

ble. While it may be and usually is convenient to compose a scene in an accurate ground glass image directly in line with the lens, instead of in an offset viewfinder, it is best to focus the image by measurement, especially with interiors photographed at large lens-openings.

The more of the above requirements and features which a camera has, the more suitable it is for professional production in 16mm. There are several cameras which have some of these items, others have most of them but at present only one camera has all of them—the Berndt-Maurer "Sound-Pro" Professional Camera.

The Bell and Howell Filmo Model 70, The Ciné-Special, the Bolex and the Berndt-Maurer and perhaps others all have synchronous motor drives as accessories and hence satisfy requirement number one.

The only camera which approximately satisfies requirement two—that of quiet operation—is the Berndt-Maurer. All the others are so noisy that they cannot be operated in the same room with a microphone without the use of a sound-proof blimp. Even the Berndt-Maurer should be used with a blimp if any close-ups are desired. Both the Bell and Howell and Berndt-Maurer have removable 400-foot magazines, and the Ciné-

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Special has 200-foot film chambers which can be used interchangeably.

The Berndt-Maurer has the best viewfinder, although the Ciné-Special is acceptably accurate and the Bell and Howell positive viewfinder with alignment gauge can be used. However, if the Bell and Howell is blimped, the use of an alignment gauge would be inconvenient. Recently, Bell and Howell has developed a new professional model which is a modification of their 70-F camera, with a shiftover mechanism in which the whole camera is shifted from filming position to viewfinding position in the manner of the 35mm. Mitchell camera. Bell and Howell has also designed a silencing blimp for this camera which puts it in the professional class for production.

Another new development in 16mm. professional cameras will soon be announced by the Eric Berndt Corp. of Hollywood. Their "Auricon" camera will contain a built-in galvanometer for single-system sound-recording with Auricon amplifiers, will have 200-foot film capacity for use with daylight-loading reels and will have an accurate viewfinder. It is motor-driven and designed so that it has a blimp built around it and can be used close to a microphone without pickup of camera-noise.

Of the desirable features mentioned above, the Berndt-Maurer is the only camera which has all of them. Bell and Howell Filmos and Eastman Ciné-Specials have lens-turrets, provision for windback and single frame exposure.

The Special in addition has a hand operated variable shutter for fades and dissolves, an accurate ground glass field for composing and an accurate footage and frame counter. The Ciné-Special's film pressure plate is removable for cleaning and checking. A soundproof blimp especially designed for use with the Ciné-Special has been built by the Eric Berndt Corp. It has provision for follow-focus on the lenses and is absolutely soundproof.

Although no blimp has been specifically designed for the Berndt-Maurer camera, it has been possible to use a blimp designed for a 35mm. Mitchell camera with very few changes. The new professional model of Bell and Howell's Filmo will have all of these features except removable aperture plate but since production of this camera has been halted due to material shortage, it is not commercially available at present. Considering all of the features which the best of 16mm. cameras have, one can readily see why the development of the professional use of 16mm. has been so rapid in recent years. With properly designed professional 16mm. camera equipment, it is possible to do in 16mm. almost anything that has been done with 35mm. camera equipment. (To be Continued)

## Background Illumination

(Continued from Page 155)

In the second exposure-sequence, the black background was replaced by a dark gray one. The illumination was

the same: measured by a standard reflected-light exposure-meter (a Weston "Master"), the background gave a reading of 0.8 foot-candles. The results, as might be expected, were virtually identical to those obtained in the first sequence.

The third test used this same gray background, but the illumination on it was increased to give a reflected-light reading (background only) of 3.5 foot-candles.

In the fourth test, the illumination on this gray backing was increased to a measured level of 6.5 foot-candles, as shown in Figure 2.

For the fifth test, the gray background was replaced with a white one, and the background-illumination reduced to a level of 1.2 foot-candles—the lowest conveniently possible with this considerably more reflective surface. This again gave a background which was very nearly black.

In the sixth test, the illumination on this white background was increased to give the same reflected-light reading was that obtained on the gray background in Test 4, that is, 6.5 foot-candles. As might be expected, the result proved virtually identical with that shown in Figure 2.

In the seventh test, this background-illumination was virtually doubled, to a reflected-light reading of 12 foot-candles.

The eighth test is shown in Figure 3. In this, the background-illumination was increased to give a reflected-light reading of 25 foot-candles which, it may be mentioned, corresponded to an incident-light reading of  $f:1$  on the Norwood meter. In this, the white background was rendered as a pleasing light gray.

The ninth test increased the background illumination to a reflected-light value of 35 foot-candles, giving an extremely light gray rendition.

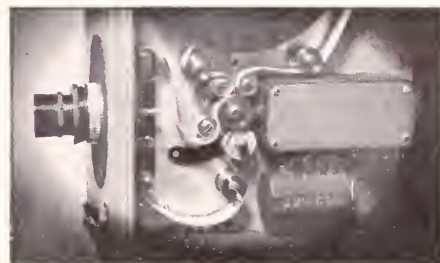
The tenth test, shown in Figure 4, increased the background-illumination to the maximum possible with the equipment at hand, giving a reflected-light reading of more than 50 foot-candles, corresponding to a Norwood incident-light reading of  $f:2.5$ . In this, as will be seen, the background is rendered as pure white, slightly lighter in tone than the rendition of the normally flesh-colored tones of the face.

In all of these tests a fact was observed which it is hoped will also be evident from the illustrations, despite the inaccuracies inevitable with the added variables inherent to magazine reproduction, namely, that regardless of the color or illumination of the background, the face tones, given a single normal lighting, exposure and printing, remained identical—and satisfactory.

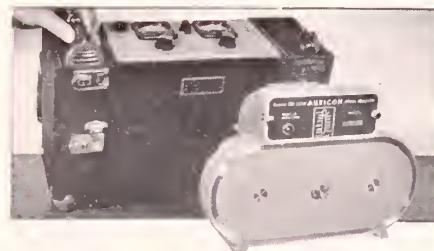
A difference in overall exposure of even so comparatively little as  $\frac{1}{2}$ -stop from the correct value as given by the Norwood meter's incident-light reading was sufficient to distort the desired tonal relationship between face-values and background and—more significantly—to distort the tonal and textural values of

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the face itself from the desired normal rendition.

In the same way, printing the scene up or down even a single printer-light setting to correct for differences in exposure-balance proved sufficient to distort the facial renditions in the normally-exposed shots, and failed to restore the desired balance between facial tones and background-rendition in the incorrectly-exposed tests.

In other words, it may be concluded that regardless of the color or lighting of the background, *there can be but one correct lighting and exposure-level to secure normal rendition of facial tones.* If this is held correctly constant by means of incident-light readings by a suitable meter, such as the Norwood, the background and its lighting may be balanced visually, the negative given strictly normal development and printing, with complete assurance that the vital area of the scene—the players' faces—will always remain correct and consistent. END.

## Scattered Light

(Continued from Page 154)

ably fine contrast. This is to be attributed to the fact that the areas surrounding the field exposed on were practically unlit, and thus provided practically no extraneous light to produce scatter.

The manner in which light is scattered by the walls of a tubular lens mount for a long-focus lens is not, unfortunately, amenable to simple mathematics, but it is relatively simple to show its practical effect. In the experiment described below, the camera arrangement was identical with that used to obtain the curves of fig 2, except that the step-wedge was substituted by a central patch giving as close to infinite contrast as could be arranged. (The patch consisted of an open-ended box facing the camera, with its interior blacked.) The lens, however, was fitted with a small tubular mount as shown in the scale drawing of fig. 3, and it will be observed that the tube length was small while the internal diameter approximated to that used in normal long-focus lens-mounts so far as its relation to the glass diameter was concerned. The interior of this tube was carefully blacked with the best matte black available, and to obtain comparative results a special light-trap was made up which could be pushed into the tube to cut off all scattered light from the walls. A calibrating exposure was made with the wedge in the dark slide, as before, and the total lens field covered 35° (as in Exposure No. 3 of fig. 2.)

The results of two tests given with and without the light-trap are shown in fig. 4. In experiment A two exposures were merely made on the infinite contrast subject with and without the trap. Here, it can be seen that after interpolation through the calibrating exposure, the minimum illumination in the focal plane with the trap was 6% of

that due to the opal sheet background, while when the trap was removed this increased to 8%. (The increase with the trap in place over the value for fig. 2—2.80%—is due to the fact that some light is scattered by the edges of the trap.) Since the lens remained entirely as it was throughout both exposures, the increase in scattered light must be due to the internal walls of the tubular mount.

The second experiment B, made on the same subject, included a small Mazda lamp (100 watts) beside the opal sheet and 35° off the lens axis, with the intention of ascertaining the effect of a bright light well outside the field. Here, the scatter values in the focal plane were both materially increased: with the trap in place, the value rose from 6% in experiment A to 8% in B, and without the trap, from 8% in A to 12% in B. The effect of extra-image light is quite clear from these two experiments, and although the scatter with the trap in place rises on account of more light scattering in the lens itself, the difference between the with-trap and without-trap exposures indicates the rise in scatter from the mount walls. The last value quoted—12%—would make a satisfactory negative image impossible, since it implies that a maximum tone range of 1:8½ odd could be recorded in the camera.

It must not be forgotten that these exposures were made without a lens-hood, but at the same time light may reflect on the interior of a hood and appear in the focal plane in the scattered form. Its intensity will necessarily be less, but something will be there just the same. For this reason, it is just as important that light-traps should be provided for the lens-hood as for the tubular mount of long-focus lenses.

So far as the writer is aware, optical manufacturing firms have not yet awakened to the necessity for light-trapping of this order, in spite of its capability of reducing scattered-light intensities in the focal plane even more radically than any surface treatment of lenses. To segregate one portion of an optical system and concentrate on its improvement to the exclusion of other equally important components of the same system is to lose perspective. and the interest in surface-treated lenses which has lately been evinced in so many quarters should have been accompanied by an equally impressive campaign to deal with the purely mechanical aspects of the optical system such as lens-hood, tubular mount, and camera interior.

One telephoto lens for a substandard camera was shown just before the war to the present writer, in which the internal walls of the tubular mount were elegantly chromium-plated, and the level of scattered-light illumination in the focal plane given by such a mount is something that any careful photographer would shudder to contemplate—yet this lens had been made by a firm with a world-wide reputation!

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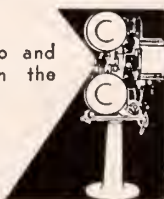
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tising has produced an impression that vest-pocket size cameras give infinitely better results than the larger sizes: the writer is not aware that any miniature camera is delivered with anything approaching an adequate lens-hood as a standard fitting. Doubtless this is due to the fact that such hoods (for an  $f:2$  lens) would be considerably larger than the camera itself, but until some form of hood other than the half-inch of flange at present deemed adequate protection is provided, the provision of surface-treated lens components is hardly worth bothering about except from the point of view of advertising value.

The cinema industry is quite another matter: cinematographers have always had a precise idea of what they required, and when it was not forthcoming from the lens manufacturer they either made it in their own workshops or else got the camera manufacturers to provide it. Unlike the amateur market, they were more interested in performance than in chromium plate. But since even the best of us may tend to take his equipment for granted once it has reached a high level of performance, it is still useful for film cameramen to consider contrast effects due to scattered light in the focal plane, and to understand how it may be dealt with on those occasions when it causes practical difficulties. END.

## It's Still A Thrill —!

(Continued from Page 152)

Francis Boggs and Young-Deer. Among the actors I remember Jack Conway—now the successful director—and his beautiful wife, Tom Santschi, Herbert Rawlinson, Kathleen Williams, Iva Shepherd, and others.

There were no studios in Los Angeles at that time. Hollywood wasn't even thought of. All the pictures were made outdoors and in their natural back-grounds. This called for wide travelling, not only in California but in most of the other Western States. Our Stock Company employed a number of real cow-boys, real Indians, and whenever we went on location we looked like a Wild West circus. Outdoor life, strange surroundings, and lots of adventure! Those pioneer movie days brought them all.

But in 1910 the first real studio was built (in Edendale) and by the end of 1911 our travelling circus days came to an end, and with it all the charm of our Wild West filming. Having to stick

always in the same place, and daily go through routine work somehow didn't appeal to me. What I was longing for was new places, new faces, and new adventure. Many people have since found them all in Hollywood, but I decided to look farther afield. I knew they must be waiting for me in my own vast country—in Russia.

So I returned to Moscow in 1912, and installed a small laboratory of my own where I could develop negative and make "rush" prints. Then I started out on expeditions of my own, covering all of Russia from the Arctic regions to Crimea, Caucasasia and Turkestan. Many a strange happenings took place during those travels! To tell them all in detail would take much more space than the Editor would allow, but here are two examples. In Khiva, I found the ruler of this distant and desert country to be an ardent admirer of photography. He owned a dozen photographic outfits of different kinds—but he didn't know how to use any of them! (I've since met amateurs in far more civilized regions who weren't much ahead of him, but we'll let that pass.) Learning of my presence, he sent for me to teach him the art of photography. Naturally I accommodated him. I gave him some lessons, but finally, I had to return to Moscow.

But the ruler's intentions were different! He wanted to keep me as his official Court Photographer, and asked me to remain forever. His offer was: his eternal friendship, a vast stretch of land, a fully-equipped house, and as many wives as I might care for! He himself had about three hundred of them; but thinking, as we "civilized" men do, of all the troubles one has with only one wife, I managed to decline his generous offer. With the utmost courtesy and Eastern emotion, we parted.

Wherever I went I was met with hearty hospitality, and it seems to me that the more primitive the people are, the more simple and direct their hospitality appears. For example, on the Khirgiz steppes, among a nomadic family, I met a higher degree of hospitality than I could ever imagine existed. After a copious meal of fat boiled mutton, the head of the family offered me his young daughter for the night! Declining such generosity without giving insult to my hospitable host called for diplomacy which, if exhibited in more civilized surroundings would, I am sure, have quali-

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fied me for any diplomatic post in the world!

There are so many races and such a variety of folklore in Russia that I kept on travelling and filming until the outbreak of World War I. Then in May, 1914, I was approached by the Russian General Staff with the request that I organize a Military Film Department. I was naturally flattered to do this, and when it was accomplished to the satisfaction of the Army officials, I proceeded to the Caucasus Front to do actual war filming myself. All the major battles on the Black Sea between the Turkish-German and Russian navies were recorded by my camera, as well as most of the important battles on land.

When the revolution broke out in 1917, I was recalled to St. Petersburg. The same year the Provisional Russian Government sent me again to America, this time with the first Russian Diplomatic Mission, to show my Russian War Films in the White House. Still being in the military service, I was recalled from America to Russia, but before I reached home, the Bolshevik revolution had taken place. The offer made me by the new authorities was short and to the point: "Either you work for us—or we shoot you on the spot!"

I still valued my life, and for two long years I travelled up, down and across Russia with Leon Trotsky as he organized the Red Army, and then filmed the Russian Civil War before I had a chance to escape.

I landed in Warsaw in 1920, a refugee—penniless, in rags and hungry. By the merest chance I met there my dearest friend and professional colleague, Georges Ercole of Pathé News, New York. He introduced me to his boss, A. J. Richard, then Assistant Editor of Pathé News, who had come to Poland on a

business trip and was looking for a cameraman. What luck! I became a Pathe News man at once, and from then until now I have kept on working under Richard's orders. When Paramount News was organized in 1927, Richard and most of the Pathé News Staff joined Paramount, and with that organization I am still at work—on my fourth continent.

It has been a fascinating work—just the kind I dreamed about in my youth. Working for an American newsreel company gives the man behind the camera all kinds of chances—maybe not that of becoming a big income-taxpayer, but including such out-of-the-ordinary ones as opportunities to be shot, hung or drowned, and once in a while the possibility of having a good time, as well!

And if you think newsreel camerawork is all just a matter of photographing bathing beauty parades and speech-making politicians, here is a record of some of my assignments in the last few years: Polish-Soviet war; Memel Putsch; Jewish-Arab revolt in Palestine; Wilkins' Alaskan-Spitzbergen flight; Gen. Nobile's dirigible expedition to the North Pole; Wilkins' expedition to and under the Arctic ice in the submarine "Nautilus;" Austrian revolt in Vienna, 1934; Italo-Abyssinian war; Spanish Civil War; Hitler's entrance in Austria; Nazi occupation of Czecho-slovakia; occupation of Albania by Italy; the beginning of the present war as the Nazis conquered Poland, and all the other political troubles in the Balkans until conditions made it impossible for an American newsreel representative to remain there longer. Then the long trip to America from Yugoslavia by way of Bulgaria, Turkey, Iraq, India, Java, Honolulu and finally Los Angeles and New York, ending in my present and very pleasant assignment to Brazil.

Add to this professional record two death sentences (fortunately never completely carried out!) and an outstanding assortment of jails for photographing things the local big-wigs said shouldn't be filmed. No lack of adventures, is there? Yet I look forward with enthusiasm to each new assignment. And strangely enough, even after thirty-eight years—it's still a thrill. END.

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## Cartoon Production

(Continued from Page 151)

in which it is presented as much as in its content. The story man has a piece of goods to sell, and good showmanship in the form of well-done story sketches, along with good ideas, helps a hundred percent in putting the story across.

Sketches are generally done on paper of one size for the sake of uniformity of appearance which makes the continuity easier to read when pinned up on the story board. A story board is a large 4x8 foot piece of wallboard or celotex, on which the story sketches are pinned



in rows with aluminum push-pins. In a sense, the script of a cartoon is composed of three or four pages, each page four feet high by eight long. However, no one is obliged to sit down at a table and turn pages that size. They're more conveniently hung up on the wall.

The first continuity of a story is thrown up with very rough sketches and pencilled notes, in order to get the overall "feel" of the picture. No time is spent on careful sketching at this stage of the game, for the next week or so will see the changes fly fast and furious. New ideas pop up constantly, and the story man works in a frenzy of creation while the story is in this embryonic state. He's left pretty much to his own devices, because it wouldn't do anyone else any good to attempt to decipher the hieroglyphics on the board that represent the story continuity to date. Neither are interruptions welcomed. Ordinarily, the story man is more than anxious to get reactions to his ideas from an outsider with a fresh viewpoint, but at the outset of a story, when the whole thing is pretty nebulous in his own mind, other folk's opinions would only prove to be more confusing than valuable. Besides, it wouldn't be any more logical to criticize a story in this rough state than it would be to pass judgment on the finished appearance of a building merely by examining the builder's first sketches. So, generally, he hangs out the "Do Not Disturb" sign.

Well, about a week goes by. The skeleton continuity pinned on the story board begins to take on some meat. Little by little the holes are filled in with new sketches. Drawings take the place of written notes, better drawings supplant the first crude roughs. It's now the first spontaneous fires of creation burn the hottest, but the process gradually slows down as the story becomes more and more tightened up. Gags that were first thought good become obviously out of place, and new ones that are more in line are painfully ground out, and worked into the continuity. A new gag might suggest a whole sequence of additional business, so it's eagerly pounced upon, fed, nurtured, and takes its place in the story. Of course, the continuity should be well enough set to withstand the assaults of all the new angles, twists and approaches that are bound to come up and threaten to throw the whole works off the track.

After the continuity seems to make sense and to move properly, action and gags are broken down to a certain number of sketches—using enough drawings to portray the business clearly. A good story sketch should represent a composite of the action in a scene. Exceptional care is devoted to developing just the right sort of pose or expression on a character, in order to punch the story point in the strongest way. Weak, indefinite poses are out, for they are only too liable to suggest that the story man was uncertain as to the attitude of his character. Animators are quick to climb

all over indefinite business. They demand a clear-cut conception of a character's feelings, mood, and action before they can transform it into life on their animating desk. So, every sketch has to mean something in telling the story.

Sketches are generally executed in pencil, with just enough shading and details to make them read clearly. There is a prejudice against "noodling" with story sketches, that is, making them too fancy with trick shading, color, background, because there's always the possibility that a change of thought tomorrow will consign many of today's drawings to the wastebasket. Story sketches should be purely functional, and not designed to satisfy anyone's aesthetic appetite.

Sometimes a color sketch is added to the continuity at spots where color, atmosphere and background effects play an important role in telling the story. It is up to the story man's good judgment to use color where it will do the most good, and not splash it all over the board with artistic abandon. In most cases, simple black-and-white sketches are all that's needed to illustrate the continuity. Cartoon men have become sufficiently skilled in imaginative visualization to be able to read into story sketches all that will eventually evolve from them as a finished picture, even in Technicolor.

Illustrating this article are story sketches from a sequence in Walt Disney's latest feature, "Bambi," which is due to be released soon. They represent the fine degree of draftsmanship that can go into the sketches of this sort. In this particular sequence, the proper drawing of the characters meant everything so far as putting over the gags were concerned, and the sketch man labored hard and conscientiously in developing the right attitudes and expressions.

This stage of story development is the ultimate polish the story man gives it before moving it to the hands of a director for animation. It represents weeks of planning and sweating on the part of a story man and sketch artist, as well as hours spent in group meetings hash-

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ing over every gag and situation.

When a story continuity reaches a certain stage of development, meetings are held to decide on improvements, changes, and to pass judgment generally. Amid a haze of cigarette smoke and a storm of words, the story is gone over with a fine-tooth comb, torn apart, analyzed and improved, and the continuity reset—until the next meeting. Those present in such a meeting usually include the director who'll handle the picture in production and who's present to make sure he's getting some funny stuff, an animator or two, and maybe a couple more story men just to kibitz.

A secretary sits over in one corner with a stenotype, faithfully recording, ad verbatim, everything that's said. The poor girl sometimes has quite a time getting everything down, especially if the whole gang gets to talking at once. Then she has to glean the wheat from the chaff. These notes prove invaluable for later reference, as no one is expected to remember all of the suggestions that pop forth in a meeting. Later, when the storm is over, the story man can catch his breath and sit down in peace and quiet, recapitulating the changes that were brought up in the meeting.

In a story meeting, it is up to the story man to explain the stuff on his boards, pantomiming all of the action as he talks, going through all the dialog, whistling tunes if necessary, being cute, coy and dramatic by turn; in short, a one-man show. Some story men get so wrapped up in their acting that they all but knock themselves out! The only danger with this is that they are liable to be funnier than the business they're explaining, and thusly a story passes muster on the basis of the story man's ability as a comedian and not so much on the value of its gags. The thing to do in a case like this is to send the story man out into the theaters instead of the picture.

After everyone's had his crack at the continuity, the story man is left to put the pieces back together again. Sometimes a story is left pretty well intact after a meeting, other times it's torn apart and strewn all over the floor. In this case, it means going back almost to scratch and starting all over again. However, changes as drastic as that aren't any reflection on the story man. Ideas are intangible elements, and a good story can always be made better by new, unforeseen inspirations.

If a meeting leaves the continuity pretty much as it was, all that's left to be done before it moves into a director's hands for production is to make slight changes here and there which will tighten it up. This final polishing process is just so much work from the standpoint of the story man. The first spontaneous rush of creation that accompanied the early stages of slapping a continuity together has long since ebbed. Comes now the detailed process of sharpening up business, improving a story sketch, adding a gag, and bringing the staging

and cutting as close to home as possible.

In doing this, the finished production is kept in mind constantly, for only by considering how a gag or piece of business is going to look on the screen can their values be accurately judged.

A screen writer for live-action pictures seldom worries about the staging, cutting, or "filmability" of his material; that's the director's worry. And a big worry it sometimes is! Since the writer works only with words, it's difficult for him to visualize a practical picturization of what he's writing about.

A cartoon story man, on the other hand, works entirely with pictures in the planning of his ideas, and it's entirely feasible for him to make a practical stab at cutting and editing the picture while it's still in story form. Live-action pictures might well take a lesson from cartoons in practical production planning, especially with all the present hue and cry about film conservation!

Actual production sometimes overlaps the story function to the extent that the dialog in a story, if okayed, is recorded while the continuity itself is receiving the final going-over. In this case—depending on the time and money budget allowed the story work—a "running reel" of the story may be prepared, which means that a rough timing is given the entire story, each story sketch photographed for the complete footage necessary to depict the action it represents, and a dialog track is cut together to run in sync with this picture reel. If music has an important part in the dramatic

effect of the story, a rough piano or organ track is prescored for certain sections.

This running reel, then, is a true representation of the story as to length and timing as it will appear on the screen, only instead of the action moving, it is approximated by the still poses of the story sketches. In this way, a sure check is made on the "screenability" of the business and the tempo of the picture while it is still in a fairly malleable state. Changes made after a picture reaches animation state are always costly and wasteful.

Finally the director who's to handle the production of the picture takes over from the story man in what's called a "pickup meeting." In this meeting, all the men who are to share in the work of pushing the picture through production are given a chance to become acquainted with it; the director, his assistant, the layout man (who will design the settings for the picture and who functions in a manner similar to a live-action art director), the animators, and the musician. The story man then has one last fling at explaining the continuity, unloads the whole works onto the collective shoulders of the director's unit—and turns his attention to a new story to start he fun all over again.

\* \* \*

(The next installment will deal with the next stage of the production of a cartoon from the director's angle—timing of action, recording dialog and sound effects, planning layouts and staging and handing scenes out to animators.)

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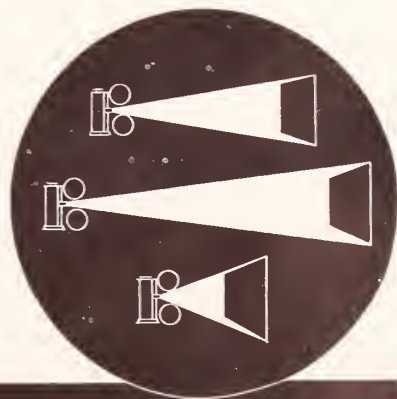
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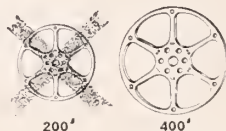
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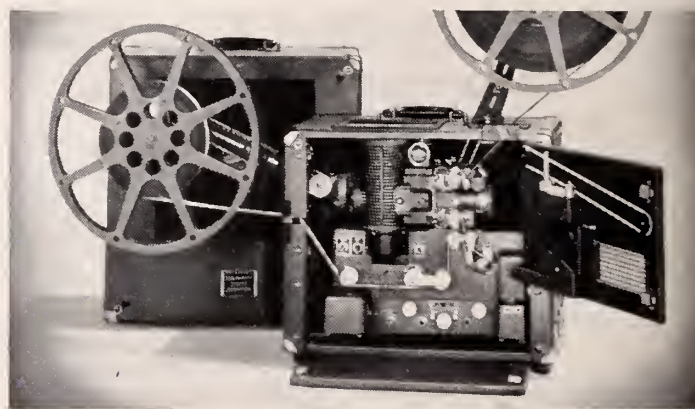
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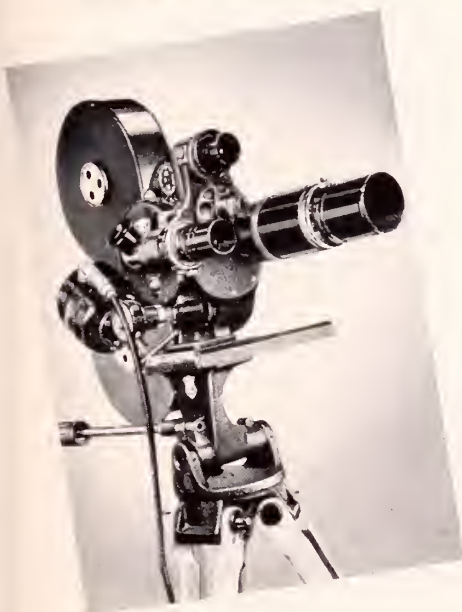
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# AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 23

MAY, 1942

NO. 5

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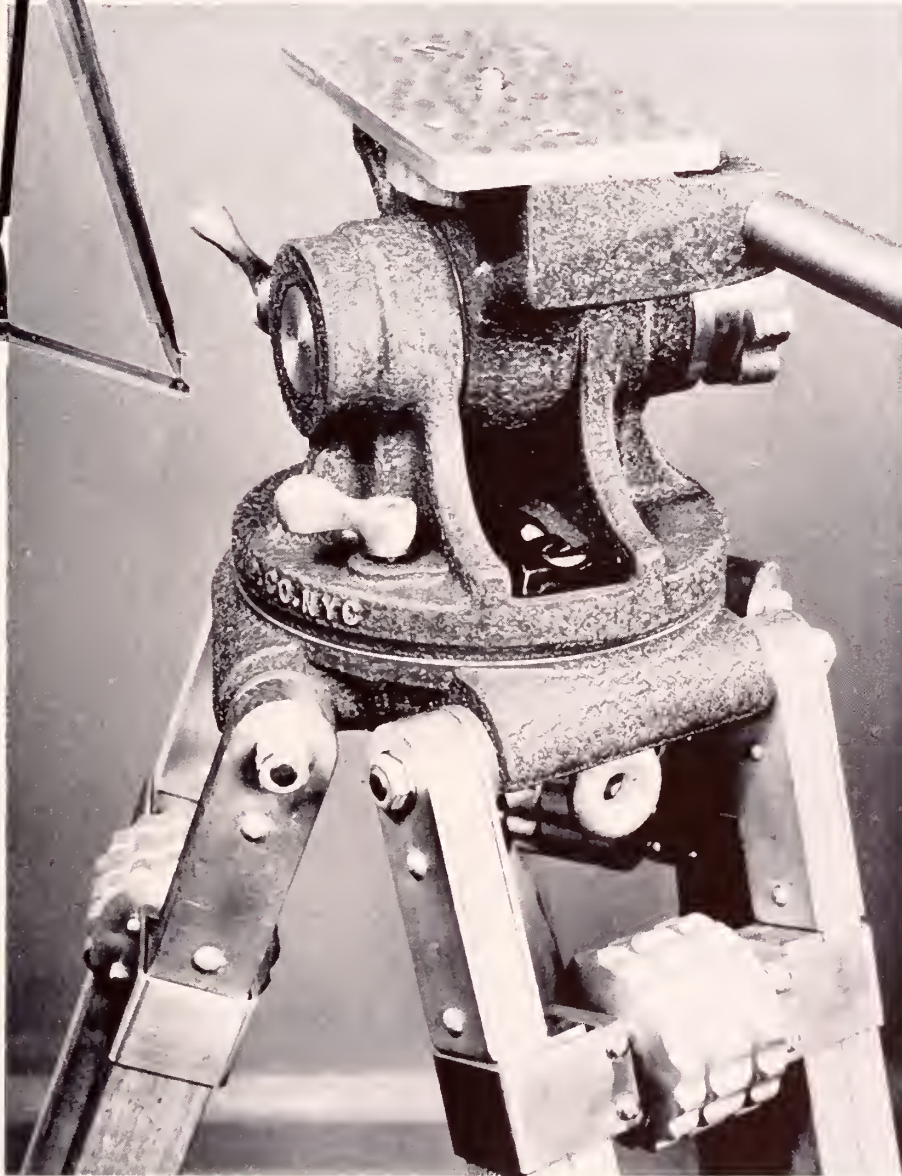


## The Front Cover

This month's cover-photo was made while the Editor of this magazine, with members of the Long Beach Cinema Club, was making a test of the new Auricon 16mm. sound-camera. The "actors" include Clarence Aldrich, Val Pope and Ray Fosholdt, respectively photographers and director of the Long Beach Club's Defense Picture. Walter Bach is seen "mixing" the sound, while Karl Freund, A.S.C., is an interested spectator. Photo by Harold O'Neal.



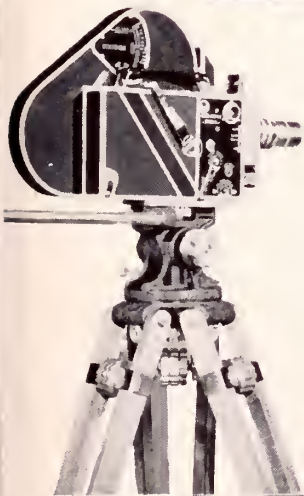
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## FIELD HINTS FOR MILITARY CINEMATOPHGRAPHERS

By CLYDE DE VINNA, A.S.C.

ONE of the chief tasks faced by the rapidly expanding motion picture sections of our Army, Navy and Marine Corps is bound to be that of making motion picture records of actual operations on the many fronts throughout the world where our forces are or will be engaged. The technical problems you'll meet in making these pictures are

enormously removed from those encountered in making ordinary training films, where like a studio cinematographer you can have things pretty well under control, and different even from what you'll face in filming manoeuvres or other training operations. So here are a few hints I hope may be helpful to service cinematographers in the field. They're based on my own experience both as one of the Navy's first cinematographers, more than thirty years ago, and in making studio location trips all over the world, from Alaska to Panama, and from Africa to the South Seas.

First of all, make your equipment as light and simple as you possibly can. Making training films at home, under studioline conditions, there may be plenty of advantages in using a completely professional studio outfit. But in the field it's different. You'll be pretty much on your own, with no assistants—and perhaps the problem will be complicated by the necessity of dodging Jap or Nazi bullets, as well. So though you may have used a Mitchell at home, don't look down on lighter, simpler outfits for field service. Never use a studio camera when a newsreel-type Akeley, Wall or DeBrie is available; and never use one of these bulkier outfits in the field when you can use an Eyemo or DeVry hand-camera.

Keep your accessories stripped for action, too. Sure it's swell to have a thoroughly professional collection of filters—but when you have to travel light and work fast, you'll find that you'll only need two or three of them. With a red filter, an orange filter, and a yellow one, you'll find you can meet almost any con-

dition that's likely to come up. For that matter, you can really get along with two; my personal pick is a Wratten 21 for heavier correction, and an Aero 2 for lighter-filtered effects.

Don't forget that three-quarters of the secret of success in using filters is correct exposure. Most photographers have a tendency to overexpose exterior longshots anyway. We put on a filter, and in correcting exposure for the filter, either get the correct exposure, or maybe even underexpose the shot a bit. The better exposure will automatically give a better rendition of the distant part of the scene. Yet we often give the filter credit for it when in reality the filter in itself has little or no actual effect.

Most of us—studio professionals included—have a tendency to try to use filters when we really shouldn't. I've been told recently of a foreign Army film unit, for example, which had to shoot a silver-painted air-raid siren against a red-brick wall. Unthinkingly, the cameraman put on a red filter, which of course turned the red bricks of the wall almost as white as the silvery siren! He'd have done a good deal better using no filter at all, and maybe underexposing a bit to artificially darken the bricks.

If you're afraid the khaki of our field service uniforms is likely to go too dark on you, your best bet is a yellow filter like the Aero 2, which will tend to lighten the olive drab coloring of the cloth. Watch out, though, for if—as is often the case in field service—some of the uniforms have been washed and faded more than others, the filter will lighten the faded uniforms (which are yellower) disproportionately.

If you're shooting where you've got unusual contrasts in reflective values and lighting in your subject, as on a brightly-lit, sandy beach or desert, or

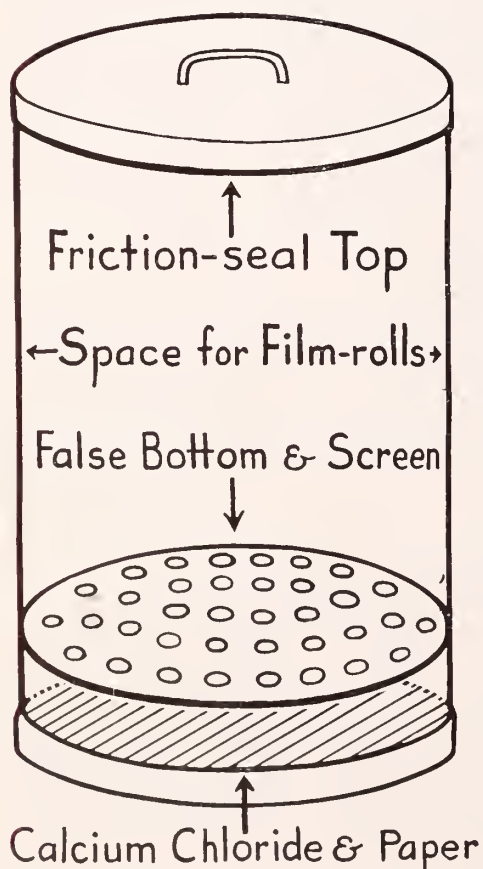


Diagram of an easily-made desiccator for dehydrating film in the tropics.

Above, U. S. Marine Corps Cinematographers at work in the field. Official photos, U.S.M.C.



with a broad expanse of air-field runways, you *can* use a filter like the 3N5 or 5N5, but nine times out of ten you'll do better simply to use a Neutral Density filter—without the color-correction—to soften your contrasts.

Exposure is an important factor in successfully handling a field job. Our modern photoelectric exposure-meters are great things, but for field service, don't get into the habit of relying on them too completely. Suppose your meter got damaged: then where would you be? Carrying two meters, each packed and carried in a different part of your outfit, is a mighty good safeguard. But don't get to leaning too completely on meter-readings, at the expense of your ability to judge exposure with passable accuracy.

Remember, there are some parts of the world in which meters just won't work dependably. I had that trouble in Alaska, when I was making "Eskimo;" John Herrmann, A.S.C., had the same experience in the Antarctic with Byrd. I don't know whether the trouble was a matter of temperature, magnetic conditions, or the peculiar lighting combination of low polar sun, snow and hazy atmosphere. But I know that while both of us use our meters very extensively in normal work, we learned we couldn't depend on them under those peculiar circumstances.

Your best bet is to learn how to couple visual judgment of exposure with the use of hand-tests. For these, all you'll need is a changing-bag and a couple of Thermos-bottles in which you can keep developer and hypo. For field use, the well-known "Tabloid" developers are extremely handy. But prepare yourself by knowing just what relation this test-solution will have (*at all temperatures, both above and below normal*) to the normal processing of the lab which will handle your negative.

When in doubt, it's usually safest to overexpose a bit. If you're within about a stop of correct exposure, a good lab will be able to get satisfactorily printable results from your negative. But if you're underexposed, you may be very much out of luck: you can't print what's not on the negative!

In aerial work, by the way, remember to open up a bit when you're shooting down from a plane toward the ground. The ground seldom has nearly as much reflective value to the film as it does to the eye, and underexposure of such scenes is an all too common fault. On the other hand, if you're shooting horizontally in the air, at another plane, you may overexpose if you don't watch yourself.

If, as is often the case in any kind of field work, you find that you have quite a wait between the time you first set up your outfit, and the time you shoot, be sensible about exposure. Except in the early and late parts of the day, when of course the light is changing very fast, you're not likely to find too much variation in lighting (unless the sky is filled with rapidly-changing clouds) over a period of half an hour or so. To put it

Dust is an ever-present menace in field work. (Photo by John L. Herrmann, A.S.C.)



differently, between, say, 7 and 7:15 in the morning, you'll probably find quite a measurable difference in light-values. But between, say, 11 and 11:30 the same day, there won't be enough change to give anyone any trouble. If you've made a meter-reading when you set up, it's likely to be still good when you shoot. And taking an extra reading in the field may not only mean missing a shot, but in personally stopping one from the other side!

When you're using telephoto lenses, watch your meter technique! Your meter, remember, is taking in a much wider angle than your long-focus lens; a Weston "Master" or a G-E meter normally scans a 30-degree angle, which is about that of a 40mm. lens on 35mm. film: but if you're using a 6-inch (150mm.) lens, you're photographing an angle of only 8.4 degrees, while if you use an 8-inch lens (200mm.) your horizontal angle is cut down to 6.3 degrees! That means you're actually making the picture with very much less light than falls on the meter.

There are two remedies. First, you can use a proportionately smaller stop than the meter's indicated reading. Second, you can, with a little experimenting, work out a series of mattes to fit over the meter's cell to cut down the meter's angle to one comparable to that of your telephoto, and then work exactly to the meter-reading. When in doubt, it doesn't hurt to overexpose a bit here, too, for you'll usually find that there's more of your telephoto field in shadow than you can easily measure from camera-position by either method.

In general, though, I think the use of telephoto lens in field work can be greatly exaggerated. There are of course times when you've just got to use them; but in most cases, I think that a shot with a shorter-focus lens—even though the image is smaller—will be better, because it will be crisper, steadier, and of better contrast. If you *have*

to use a telephoto, be sure and use the deepest, tightest lens-hood you can possibly get. That will improve the contrast enormously.

In field work, "baby" your equipment just as much as you can. Keep the lenses capped as much as possible, to protect them from dust, spray and other damage. But don't forget to make mighty sure the lens-cap is off before you shoot!

On land, your biggest problem is dust—especially in these days of mechanized warfare. Dust in the aperture, or in any of the bearings, gears or moving parts of the camera can prove ruinous. Keep your camera covered as much as possible, so the dust won't get in, and clean it just as often as conditions permit.

At sea, the salt spray is an enemy of all photographic equipment. It corrodes the aluminum of which most cameras are made, and doesn't do the lenses a bit of good, either. Keep your lenses capped and if possible in closed cases as much as possible (keeping them in tightly-closed cellophane bags is good, too) and when your camera is not in use, keep its metal parts covered with a liberal application of grease, through which the salt air has trouble penetrating.

(Continued on Page 226)







Berndt-Maurer Recorder, with multiple disc recorders and playbacks, make a flexible set-up for 16mm. professional use.

## Sound And Editing Equipment For Professional 16mm Production

By JAMES A. LARSEN, JR.

**A**LTHOUGH 16mm. sound-recording equipment is manufactured by several companies, including the Berndt-Maurer Corp., Canady Sound Equipment Co., Herman DeVry, R.C.A., C. R. Skinner and Western Electric Co., most of the established professional 16mm. producers used the Berndt-Maurer "Model D" Recorder and amplifiers. This equipment consists of a sound recorder with a variable-area galvanometer, a recording amplifier, a power supply and a noise-reduction amplifier plus the usual microphone and cable connections.

One necessary feature of any 16mm. professional sound-recorder is the ability of the recorder to run equally well in either direction, which makes it possible to record sound negatives suitable for printing with either original camera-negatives or with duplicate negatives made from reversal or color originals. The Berndt-Maurer "Model D" is constructed to do this.

Another of its professional features is the gear-driven film-magazine which takes up automatically in either direction. The takeup tension is applied by a fric-

tion clutch whose tension is adjustable. The film magazines designed for the recorder are interchangeable with those on the Berndt-Maurer Camera. Both 400-foot and 1000-foot film magazines are available so that in re-recording, a complete two-reel film can be recorded on a single continuous piece of film.

One of the best features of the Berndt-Maurer recording equipment is its ready portability. Recorder, amplifiers, cables etc. can be packed in five small cases. The recorder has a heavy flywheel on the sound recording drive sprocket to insure even flow of film past the recording light. This flywheel must be removed when the equipment is shipped to a location for recording.

With a battery-operated rotary converter, this equipment can be used to make recordings anywhere away from A.C. current-supply, and can be operated with any motor-driven camera either from the converter or from A.C. current for double-system recording.

When the Berndt-Maurer equipment is used with the new high-resolving sound-recording films and filters and printed on fine-grain positive stocks, the frequency-

response and freedom from distortion which is obtained with 35mm. recording can be equalled on 16mm. Because 35mm. originals are not always equalized for reduction printing on 16mm., it is quite possible to obtain results in direct-16mm. recording that can exceed in quality those obtained by reduction-printing from 35mm. originals.

The Eric Berndt Corporation of Hollywood makes a light-weight inexpensive 16mm. recorder which is marketed under the name of "Auricon." This recorder uses 200-foot daylight-loading spools of 16mm. sound-recording film and can be used to shoot double-system synchronous dialogue productions with any motor-driven camera, or can be used to record offstage narration, music and sound-effects for silent films.

The carrying case for the recorder serves as a blimp for the recorder so that it can be operated in the same room as the camera and microphone. The recording amplifier and all controls are contained in another case, so that with two small cases, it is possible to record sound on film anywhere that A.C. current is available to drive the recorder motor. A special portable power-pack is offered to drive the recorder motor and also a camera-motor when A.C. current cannot be obtained. Recording of both voice and music have excellent frequency-response and adequate volume.

In making the class B type of film mentioned above—in which an offstage voice is added to a silent film, there is no need for re-recording equipment. However, if the need arises to combine an offstage voice with musical background or sound-effects, or with synchronous dialogue previously recorded, one or more 16mm. re-recording units become a necessity. Even with an all-sync dialogue film, it is usually necessary and always desirable to re-record in order to make sound levels match.

With these requirements in mind, the makers of the Berndt-Maurer recorder introduced a high quality film phonograph for re-recording purposes shortly after they made the "Model D" recorder available. With the optical system in this film-phonograph, no loss of high frequencies is encountered, and no distortions are introduced in the process of re-recording. Furthermore, the frequency-characteristics of the re-recorded track may be modified by means of suitable filter networks as is the common practice in 35mm. re-recording.

With several of these film phonographs or "dummies" it is possible to get almost any effect that is standard practice in 35mm. re-recording. A special reproducing amplifier and speaker are available for use with the film-phonograph which are capable of reproducing all the frequencies that the 16mm. recorder and film are capable of recording. A loud-speaker for monitoring original recordings or re-recordings is supplied which,

(Continued on Page 238)



**H**ARRY RIGNOLD, pocket-size cameraman, has been a War Office cinematographer since the beginning of the war (11 Sept., 1939). He went right through the West Front campaign, shooting stuff for record purposes and the newsreels, and only just managed to get out of Boulogne in time. Since the formation of the Army Film Unit he has been cameraman for them. The Vaagso material is generally reckoned to be the finest action stuff shot by British cameramen in this war.

"We'd been up north with the Commando boys for more than a week, practising landings and so on. The party consisted of Capt. Roy Boulting, also of the Army Film Unit, Jack Ramsden, of Movietone, and Harry Watt, Lt. Mallindine, official photographer, Ralph Walling, of Reuter's Agency, and myself. Word came through that we could expect to move shortly, so the day before sailing we shot all the introductory and insert stuff (weighing anchor, priming the grenades, limbering up and standing to waiting for the order to land). I borrowed some ship's loading-lights to photograph these with.

"The next day we sailed. There were two ships taking the Commandos, with the landing barges secured on deck, and a naval escort. Jack Ramsden and Mallindine went on one ship, the rest of our party on the other. The Commando fellows are a grand bunch. As a matter of fact several of them I knew quite well already as I'd been with them in France Lofoten. The only thing that worried me was that all their equipment, table drawers and so on were stuffed with ready primed hand grenades, revolvers and ammunition—and the nonchalant way in which they tossed the stuff about was enough to scare you stiff. One of their tricks was to demonstrate the fuse on their bakelite blast grenades. This is a length of tape with a weight on the end, and they would unwind this till you cried for mercy. I'd got a revolver too, for my own protection, a whacking great .45, which I've never had occasion to use yet and which will almost certainly knock me over when I do.

"The equipment I took included two Eyemos, plenty of stock, Plus-X and Double-X, a light freehead tripod for use on board ship—all the stuff on land was shot in the hand and I was very pleased afterwards with its steadiness and the success of some of the panning shots. I was determined that whatever rough handling the cameras got they shouldn't go out of focus, so during the preparatory period I continually made tests and in fact did the last ones just before we landed.

Jack Ramsden had a Newman and a DeVry. The advantage of a Newman, of course, is that it takes a 200-ft. magazine, and has an easier finder for long-focus lenses. But it is bulky and very tiring to lug about for long periods if you're heavily laden and running. I didn't need to use any other lenses than the 1½ and 2 inch on Vaagso.

With the two Eyemos I simply shot the



## Shooting With The Commandos

By CAPT. H. W. RIGNOLD

As Told to a Representative of the British Association of Cine-Technicians

100 ft. in one, then the 100 ft. in the other, whipped out the exposed spools and reloaded both, which is a very quick operation, and if I had had anybody to reload for me, would not have held us up at all, as we could have reloaded one camera whilst I was shooting with the other.

"Anyway, off we started, and I must confess the voyage wasn't too pleasant for me. On the way over, I was sick as a dog. The ship had all the landing barges lashed on deck and what with that and the extremely rough sea she rolled so badly that I was fit to die. However, luckily the last bit of the voyage was in a calm channel, which gave me the chance to recover and go below to get a bit of breakfast—the last food before we got on board again. There were bully beef sandwiches for anyone to take who wanted them, but I don't think those who did had any time or desire for eating when it came to the point: the tension was too great.

The weather of course was bitterly cold. We wore battledress (no great-coats) with webbing equipment, and I carried the stock in packs, one on the left for exposed, one on the right for unexposed. Under the battledress tunic we wore a leather jerkin which fortunately went well below the level of the

tunic and acted as a windbreaker. Under that a good few woolen pullovers, with a rollneck one on top, with the tunic buttoned up over the rollneck as it was white and would give us away. Under the whole issue I wore pyjama trousers. Then we had close-fitting woolen gauntlets, with a thumb and one finger and a second gabardine pair to pull over them to hold them tight at the wrist: of course I had to take these off everytime I reloaded and my hands kept pretty numb. So there we were all ready.

"After we'd gone up the Sound a bit, the other ship with Jack Ramsden aboard separated to do their job on the island of Maaloy, and shortly after that the order came through to stand to, and we got into the barges. It was about half-past eight in the morning and just beginning to get light.

As the barges came close inshore Hampdens flew over dropping smoke-bombs all along the beach and the air was very soon thick from them. It was in the middle of this and in the half-light of morning, with a bit of help from planes, that we shot the stuff of the barges coming in and troops landing in the smoke.

I used Super-XX on this, but for the rest of the time Plus-X only: Jack Rams-

(Continued on Page 237)





# Animated Cartoon Production Today

## Part II: Production Preparation

By CARL FALLBERG

**T**HE director of an animated cartoon, in general, has the same responsibility as the director of a live-action picture. He determines the tempo and pacing of the picture, the staging, screen performances of characters, and coordinates all of the production activities—animation, music, layouts, dialog and sound-effects recording, cutting and color, keeping all of these varied factors under the control of his experience and judgment and directing their functions toward one homogeneous result: the finished picture.

He can make or break a picture. A story man can go only so far in presenting an idea; the director must take this idea and bring it to life as an active, moving piece of entertainment. If it moves badly—if the gags fail to get over, if the animation is uninspired, if the staging and cutting are confusing, if the story pacing is uneven, if the music and color are dull, no one is blamed but the director.

He must be a jack-of-all-trades in the cartoon business and a pretty fair master of all of them. He deals with the different personalities of many men constantly, so he has to have a streak of the diplomat in him. Budgets and pic-

ture costs impose problems for his business sense to tackle. He must appreciate the finer points of art and music, he must be able to wet-nurse a weak story into strong life, he has to understand and appreciate the problems of the animator, layout man, background artist, film cutter, musician, cameraman, inker and painter. This probably sounds like an awful lot for one man to know—and it is. But that's why good directors are few and far between.

This combination of talents is developed only through experience. Most of the cartoon directors have come up to their present spots through animation. Complete understanding of this part of the business is important, because the director deals with the animator and his problems more closely than with any other part of the production procedure.

As a rule, the director will not participate in the process of story development before the picture reaches him for production. His contact with the story is only through an occasional story meeting prior to the time he takes over. However, story changes and improvements are liable to occur anywhere along the line during production, for there's no telling when a new idea is going to pop up that's better than one already in the story. But allowances can't be made in time and money budgets for changes of this sort; the story continuity is assumed to be correct when it enters the director's unit. So the director, all through production, is out on a limb—beset by the urge to make changes and improvements but held in check by the uncompromising limitations of the picture's budget.

The director has become fairly familiar with the story before it lands in his lap, so has had his chance to get his two-cents worth in regarding its development, and really can't blame the story man completely if he isn't getting some funny stuff to produce. While it isn't necessary that he be creative, he should be a good critic of gags and story values

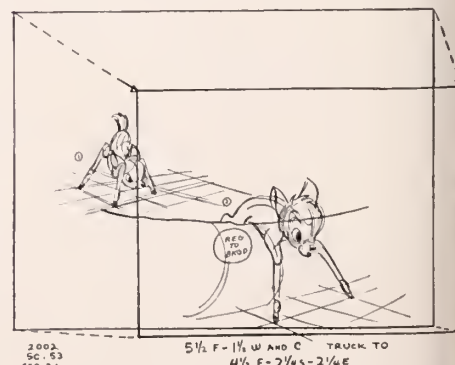
and be able to rebuild weak spots if he discovers any during the course of timing the picture.

The ideal condition would be for the story to come to the director so tight, so foolproof and so carefully worked out by the story man that from here on in it's just a matter of animating life into it. The story man generally times his material out with a stop-watch, to make sure it will fit into the prescribed footage for a short-subject; between 600 and 700 feet. However, the story man, no matter how carefully he weighs his material, cannot analyze it as thoroughly as the director, who plans every action to the last frame of film.

The story gets its final, complete working-over when the director starts timing it out for animation. He sits down with his stop-watch and metronome, translating every action on the story board into terms of screen footage. He analyzes these actions carefully, probing deep for any bugs or weak spots—which show up in a hurry under this exacting scrutiny. Better ways of staging are uncovered; gags are added to strengthen a story point, or material eliminated that's too long or off the track or disturbing to the overall story pacing. He finds more simple and direct ways to



Layout-man's sketch of the finished set-up, with the path of the character's action illustrated. This is the working layout on which the animator plans his action.

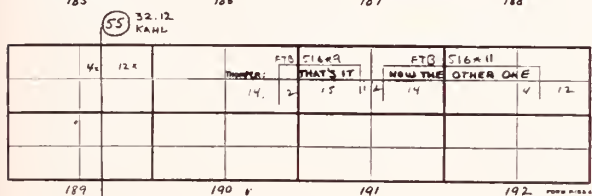
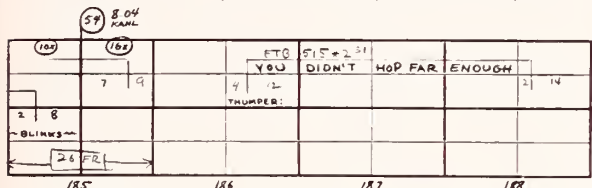
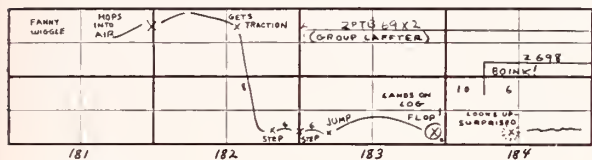
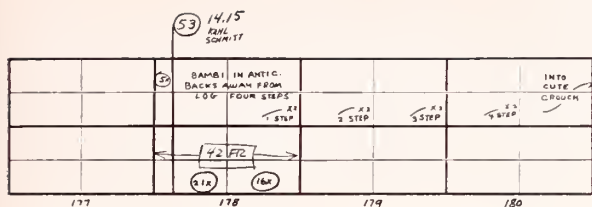


Layout chart on the scene, indicating camera positions, path of action and perspective for animator to follow.



2/16's

(12)

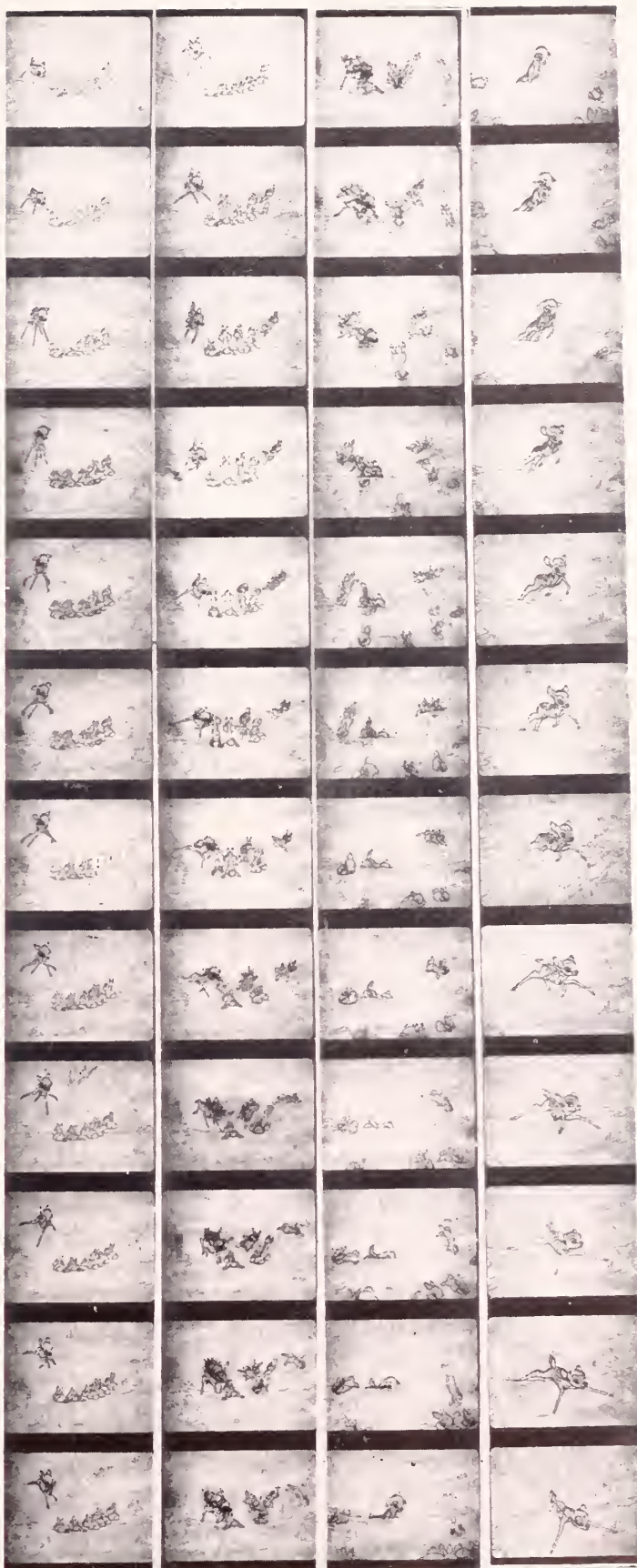


put over business; assuming that the direct approach is the only one. In animation, no false movements should confuse the main line of action, likewise, there should be no false gags or ideas to distract from the main story line.

The axe is ruthlessly swung, if necessary, to chop the overall footage down to the prescribed 700 foot limit, or to trim the story into a simpler form. If it isn't advisable to trim out any business, the director can go through the whole picture and find spots to speed up action just a little faster here and there. Usually, the story man is urged to deliver a story that is a bit under footage according to his rough, first-hand timing, for invariably the director will require more footage when he goes in for his more detailed timing.

Many considerations enter into this timing process. It isn't a matter of simply checking the length of the actions mechanically with a stop-watch. Every action has to mean something in forwarding the story. The animator must have very definite action outlined to him before he can translate story ideas into tangible drawings. Nothing will appear on the screen that hasn't been drawn. The smallest blink of a character's eye has to be accounted for with carefully executed drawings, costing money. There are no ad-libbing performances in cartoons. A live-action director can outline the general idea of an action to a performer like W. C. Fields and leave the actual performance up to Fields' own judgment and ad-libbing genius. But animators, assistant animators, in-betweeners, inkers and painters can't ad-lib their way through a cartoon. It would

On opposite page, the story sketches of a scene from Walt Disney's "Bambi." Above, this page, "bar work sheet" of the same scene. In this is a complete record of everything in the scene—scene numbers and footage, tempo and lengths of musical measures, dialog and sound-effects tracks—in their correct relationship. At right, animator's pencilled drawing of actual animation of this scene. All illustrations © Walt Disney Productions.



be an unholy mess—and a costly mess too.

A cartoon director, therefore, is obliged to account rigidly for every bit of story action, breaking it down into definite pieces of pantomime of very definite lengths.

The director starts timing the pic-

ture on the assumption that every foot of action will be paced to some particular musical tempo. Music is the backbone of a cartoon. The whole effect and charm of animated cartoons lies in the coordination of music and action. Not

(Continued on Page 232)





## Aces of the Camera

### XVII:

### George J. Folsey, A.S.C.

By WALTER BLANCHARD

**G**EORGE J. FOLSEY, A.S.C., is the perfect embodiment of the old axiom that "cinematographers are born, not made." So far as he can recollect, not one of his family had ever had any inclination toward photography, or even so much as owned a dollar "Brownie." He, himself, had never had any photographic leanings. But when, at the age of fourteen, he had his first glimpse of the details of a studio cinematographer's daily work, something clicked inside him and said "That's it!" Today, he is acknowledged as one of the industry's foremost specialists in glamor cinematography; at a time when the

pressure of production speed-ups tends greatly toward standardized camerawork and lighting, he is one of the few who manages to retain a strongly distinctive style. You can walk in on the middle of any one of his pictures and before three scenes have flashed across the scene, say to yourself with confidence, "George Folsey must have photographed this."

Looking back at things, George Folsey finds a good deal of humor in the way he started into the business. "Believe it or not," he says, "I'd been working in the studio for fully half a day before I knew what kind of a business I was in! That sounds as though I was the original Joe

Dope, but it really wasn't quite as bad as all that.

"Here's how it happened. I'd been working as an office-boy for a New York magazine publishing firm, but somehow the work didn't suit me. I wasn't afraid of hard work—but nothing about the publishing business managed to capture my imagination. Finally one morning I just decided there wasn't any future for me in that work. So I quit. Just like that.

"I went back to the Y. M. C. A. Bureau through which I had gotten the job, and told them I didn't like it, that they should send me out on something else. They dug into their files and told me they'd just had a call for an office-boy from the Lasky Feature Play Company. That didn't mean anything to me, but it sounded like a job, so off I went to the address they gave me.

"When I reached the place, the chap in charge of the office insisted that even though it was afternoon, I get to work right then, rather than start in the morning. I didn't particularly want to, but finally I was persuaded. I remember it was one of those hot, sleepy New York summer afternoons, and I didn't have very much to do. I hadn't the slightest idea about what my new employers did, and nothing happened to enlighten me.

"The next morning I reported for work as scheduled. A few minutes later, I almost fell out of my chair: through the door and past me into the dark recesses of the building walked Marguerite Clarke! A minute or so later, in came Carlyle Blackwell—Mary Pickford—Louise Huff—John Barrymore—Harold Lockwood—all the movie stars I'd admired at the neighborhood nickelodeon! And I discovered they actually worked there—! I decided I was going to like that job—and hold it no matter what!

"In this, I met some opposition from the family. Not that they disapproved particularly of the movies, but the job paid two dollars a week less than my previous one, and they couldn't see any future in it.

"But I stuck. The more I saw of the picture business, the more I wanted to be a part of it. There was such infinite variety to everything about it—even for me, a lowly, fourteen-year-old office-boy. One of my most frequent tasks was to go out at noon-time and bring in sandwiches for Jesse Lasky's lunch—not to mention many a cocktail for John Barrymore. At other times, I'd have to take messages in to people on the stage. What a thrill that was—to prowl around that huge, echoing loft where in one corner I might find a company shooting a Western, in another, a troupe doing a 'society drama,' and in another, still another group filming a romantic costume drama—all on one stage.

"Many's the time when a harassed assistant director would rush out into the office and press me into service when some troupe inside suddenly needed a kid to play an office-boy, a bell-hop, an elevator-

(Continued on Page 230)





President Fred Jackman.

## JACKMAN AGAIN HEADS A. S. C.

Sol Polito and Karl Struss were elected to the Society's Board of Governors, with Boyle replacing George Barnes, who has been unable to serve actively. The complete governing board consists of Past-President John Arnold, Past-President Boyle, Charles Clarke, Arthur Edeson, George Folsey, Byron Haskin, President Jackman, Rudy Maté, Arthur Miller, Sol Polito, Ray Rennahan, Charles Schoenbaum, Leonard Smith, Karl Struss and Joseph Walker.

Following his re-election Jackman said, "I consider it a privilege and an honor to be selected to serve again, and with such a truly representative group of co-workers. Though we officially head the Society, we do so only as representatives of the membership, and I cannot recall a time when the members have elected a steadier or more thoroughly representative group to the board.

"We are all of us going to miss the several members whose terms expired with this election, even though we know we are assured of their continued loyalty and cooperation as individual members of the Society. On the other hand, I feel sure the Society is the gainer by the appearance of so many new members among the Board and officers. We do not want the A.S.C. ever to degenerate into an organization that is constantly run by a comparatively small group of the same individuals, and this rotation of offices and responsibility is a very healthy sign that this is not going to happen.

"It is for this reason that we are initiating a policy of inviting individual members to the Board's meetings, where their advice and suggestions as we try to plan the Society's policies will be most cordially welcomed. We have no secrets: we are only fifteen men trying as best we can to put into action the desires of the membership behind us, and ideas from other members, who may not perhaps be so close to the organization's problems as we, can be very helpful to us.

"I am happy to be able to report that the Society's position as we start our new administrative year is better in almost every way than it has been for many years. Financially, the Society is operating on a satisfactorily sound basis. Our position in the industry is much more satisfactory, as well. Problems which have troubled the profession for years are well on way to successful solution.

"During the coming year, we as cine-



First Vice-President Arthur Miller.

matographers will find added problems and responsibilities to face, and new and important opportunities for service, as well. The Nation's War Effort is placing a twofold responsibility upon us, not only as an organization, but as individual cinematographers. On the one hand, the photographic services of our armed forces are calling more and more of our members to active duty. As time goes on, still more cinematographers are bound to be summoned to key posts in these services.

"Yet at the same time, production here in the studios must go on. Motion pictures for entertainment, for the upbuilding of public morale, and for public information are essential services which must be maintained. As more and more of the industry's key photographic personnel go into the uniformed service, this will not be easy—but we can and will do it.END.



Second Vice-President Leonard Smith.



Third Vice-President Karl Struss.



# A.S.C. on Parade



Art Lloyd, A.S.C., is now officially Captain Art Lloyd, U. S. Army Signal Corps. En route back to the Army's Training Film Production Center at Ft. Monmouth, Art is looking forward to a reunion-in-uniform with his son, a Lieutenant in the Army Air Force. And with those Captain's bars on his shoulder, Pappy Art still rates a respectful salute from the offspring!

Pitching in for semi-military service on the Home Front, A.S.C.-pilots John Fulton, A.S.C., and Dewey Wrigley, A.S.C., are active members of the Civil Air Patrol here in California. Likewise John L. Herrmann, A.S.C., who does his flying and filming down around New Orleans way.

From Rio de Janeiro, Harry Wild, A.S.C., airmails a cheerful "t'aint so" to the squib about his car in last month's issue. Says Harry, "Thanks for the publicity, but I still say it wasn't my car!" (Maybe it wasn't, but we're still pretty sure we saw Harry's name on the registration-slip—but we won't argue!) Harry seems to like Brazil. He continues, "Well, Bill, as for Rio, it is a great place with plenty of color. "Duke" Greene and I are working hard—both in the studio and on exteriors. We expect to be here for two months more. Give our regards to all the boys."

Virgil Miller, A.S.C., phones in to take our printers to task for a typographical error in his article on filter factors in the March issue. Right at the start, Virge correctly stated that "Orthochromatic negative, being insensitive to the . . . red end of the spectrum, gave us untrue color-values." But our printer, apparently wanting to give the film all the breaks, dropped off that little "in"—which made all the difference in the

world! Incidentally, Virge is just back from Ft. Sill, Okla., where he finished an Army Training film five weeks under schedule! Nice going, we'd say.

Ernie Haller, A.S.C., Jimmie Howe, A.S.C., and Sol Polito, A.S.C., sitting at the Warner studio cafe's camera table, listening solemnly while Acadaward Actor Donald Crisp ribs them with an account of a Rube Goldbergish plan to save film by using sensitized string and a doughnut-shaped super wide-angle lens.

Greetings to two new members of the A.S.C.—Al Irving, A.S.C., and Rolla Flora, A.S.C.—both of 20th-Fox' trick department.

Lucien Andriot, A.S.C., just had his option picked up at 20th-Fox. Ditto Charles Lang, A.S.C., at Paramount, and Phil Tannura, A.S.C., at Columbia. "Little Phil" tells us he's starting his sixth picture since Jan. 1st, with an occasional day off for good behavior.

There's a question in our mind who is doing the most lyrical job on Loew-Lewin's "Moon and Sixpence"—Johnny Seitz, A.S.C., who is photographing it, or Johnny Miles, who is publicizing it. We'd say it would be a photofinish if Publicist Johnny would write some of his lyric prose about the swell work Cinematographer Johnny is doing. How about it, Johnny—? (You guess which!)



Looks as though John L. Herrman, A.S.C., F.R.P.S., F.R.S.A., etc., can add a new title to his alphabetical trailer. On a recent vacation in Florida he dropped in to visit his pal Clyde Beatty, and—as the picture shows—tried his hand at lion-taming.

George Folsey, A.S.C., happy as a kid with a new toy, pedalling around Brentwood on his new bike, a snazzy English racing model.

Appreciation to columnist Sidney Skolsky for the nice break he gave George Robinson, A.S.C., in a recent column.



Lloyd Knechtel, A.S.C., is another member who has switched from civvies to uniform. As First Lieutenant Knechtel, Signal Corps, U.S.A., he's off to take charge of process work at the Army's new Film Production Center, the erstwhile Paramount Astoria (L.I.) studio.

We got it straight from headquarters that this true. Seems ten years ago Jimmie Howe, A.S.C., had a pal who was a struggling young scribbler. One evening, Jimmie suggested a story-idea to the scribbler. A few weeks later, the writer handed Jimmie a script based on it, with the request that Jimmie show it to his then boss, David O. Selznick. But Jimmie got cold feet; maybe he felt more at home behind the camera than as an amateur literary agent. Anyway, he reported D.O.S. didn't like it, and his pal made him a present of the script, which he tossed casually into his car. But today, Jimmie's beginning to thank his lucky stars he kept transferring the script from each car to its successor. His author-pal, you see, is William Saroyan, whose latest script went to MGM for \$60,000—!

Charles Schoenbaum, A.S.C., in town from filming an Army Training pic at Ft. Sill, Okla., had only time enough to put a new toothbrush and a clean collar into his bag before hopping off for Salt Lake City, locationing for Paramount.

Because his car was in the shop, Leonard Smith, A.S.C., rode into town on the street-car the other day. He says it was his first trolley-ride in more than twenty years—and now he hopes more than ever they find something to make tires out of!

Always a pleasure to visit the camera-rental shop of Sam Landers, A.S.C., 'cause both of us collect phonograph records—and like to talk about it when cinematic shop-talk is exhausted.



# THROUGH the EDITOR'S FINDER

AS America's participation in the war increases, it is interesting to note the parallel increase in the use of 16mm. motion pictures by governmental agencies, civil and military alike. Instructional films, not only for training embryo soldiers and sailors in specialized military subjects, but for training civilians in civil defense subjects, as well, are being released in 16mm., regardless of how they may have been made originally. Several governmental departments, both civil and military, are turning to amateur-made 16mm. films as a vital source of information about foreign regions which are or might possibly become theatres of military operations. And at least one branch of our military forces has standardized its film-making program on 16mm. from camera to projector.

In this connection, we'd like to urge upon those in charge of our military film-making a fuller consideration of the many advantages of using direct 16mm. throughout. With of course the exception of films intended for immediate theatrical release, like the O.E.M. documentaries, and the training films assigned for production by Hollywood's studios, which are already geared to 35mm. rather than 16mm. production, it would seem that direct 16mm. offers the ideal medium for military filming. Camera equipment is lighter, more portable, and much more readily available in quantity than even the simplest of 35mm. Direct-16mm. sound-recording, where the ultimate release is to be largely in 16mm., gives better results than any optical or electrical redaction from a 35mm. track. Film-supplies are not only more compact and economical, but in a pinch 16mm. film—and often processing, as well, due to the far-flung facilities of Eastman and other firms—will be available in almost any civilized part of the globe. And finally, modern technology has made it possible to obtain excellent enlargements from well-photographed 16mm. to 35mm. wherever and whenever the securing of some unexpectedly important subject makes a 35mm. theatrical release desirable.

There is an additional, but seldom considered, advantage to this "all-out" use of 16mm. as regards the personnel who will handle the actual camera manipulation. It has been estimated that there are close to a million 16mm. and 8mm. cameras in use in America today for amateur, semi-professional and professional film-making. Of the people who use these cameras, several hundred thousand are inevitably of military age. Many of them are already in our armed services, through draft or enlistment, and are just as inevitably gravitating toward the respective photographic sections. Though they know cinematography, these men would require time-consuming and expensive training before they can

efficiently handle professional 35mm. equipment. *But they are already familiar with the capabilities and use of 16mm. equipment*—more so, in many cases, than the average 35mm.-trained professional. Under the direction of studio or news-reel-trained professionals who, as commissioned officers, may logically be expected to head any field film unit, these erstwhile amateurs, with little or no additional training, are capable of going into the field and bringing back a first-class 16mm. picture. It has been said that our Army, Navy, Air Force and Marine Corps need trained motion picture crews urgently. Here's one way to get them, quickly and efficiently!

THE subject came up in one of those lunch-time chats at a studio commissary. A rather distinguished cinematographer had been abruptly removed from a picture, and replaced by another man. The cinematographers present knew that no particular blame attached to the man removed; it simply wasn't his type of picture. Why was it, then, we wondered, that so many non-photographic folk in the studios went around commenting on it in hushed voices and the peculiar pseudo-horror that is the stock-in-trade of scandal-mongers, to the effect that "I hear poor old X— was pulled off a picture. He must be slipping!"

Come to think of it, the cinematographer's position in a case like that is unique. A writer can miss fire and be replaced on an assignment and everybody takes it as a matter of course. A director can bow out of an assignment that doesn't suit him, or stick with it and turn in an indifferent job, and everybody acknowledges it just wasn't his type of story. A star or featured player can give a poor performance in an unsuitable part, and receive praise for doing so well with indifferent material or in a part for which he was obviously miscast.

But let the same thing happen to a cinematographer, and studio tongues start wagging with "poor X— must be slipping!"

And yet if you analyze them, the photographic differences between a musical, say, and a Bette Davis drama, or between a program picture and an "A", are at the least no less than those involved in writing, directing or acting. Why, then, should it be considered normal for a writer, director or player to admit he's mis-cast on a given assignment—and not a cinematographer?

In one sense, it might be termed a compliment to the cinematographer that he is given credit for a degree of versatility that no other group in the industry even approaches. But it seems to us more likely that the time has come when the industry should recognize that cinematographers, as well as directors, writers and players, can be mis-cast!

EVERY so often, somebody (usually outside the industry) questions our contention that studio cinematography is a job of literally man-killing responsibility, and badly underpaid, to boot. When we point to the number of graves prematurely filled by A.S.C. members, they insist that some of these men must have been in poor health (they don't say why!) and that the law of averages, so dear to insurance underwriters, would have removed them from our midst, anyway. To support their side of the argument, they point out that the cinematographer has a fascinating, varied and enormously glamorous work, and earns on the average a good deal more than the average doctor, lawyer or corporation executive outside the industry.

For their benefit, here's a bit of rough mathematics which may prove revealing. Assume the average major-studio program picture to represent an investment of \$400,000, with a shooting-schedule of 18 days. (That's a fair average; some go considerably under that in both time and money, but others go sufficiently over it to make the average balance out correctly.) Assume again that these 18 working days consist of 8 working hours apiece. A bit of elementary figuring with pencil and paper will show that this average picture represents a cost of \$22,222 per shooting day. A little more figuring will show that this means an average of \$2,777 per working hour, or \$462.95 per minute! And these figures increase disproportionately as the budget and importance of the production increase above the average. Imagine what they must be for a "Gone With the Wind!"

The director, producer, writers, actors and others all have a clear responsibility as to how purposefully these expensive minutes, hours and days are spent. But upon the cinematographer rests the sole responsibility for translating what is done during these precious minutes into saleable form on the little strip of celluloid which goes to the theatres. This responsibility is his alone—undivided. There is no one with whom he can share it. It is for him alone to decide whether, if he spends a minute readjusting a lamp to make the star look a trifle more glamorous, it is worth the \$500 it costs his employer. It is for him to decide whether, if he spends an additional ten minutes lighting, rehearsing and perfecting a difficult dolly-shot, it is worth the \$5,000 in additional costs.

Bear in mind, too, that retakes made (as they often are) after sets have been dismantled and actors released from their contracts are much more costly than the original scenes they replace. Yet retakes to repair faulty acting, direction or writing are taken as commonplace, while in most studios, retakes for the camera are usually regarded as but one degree less criminal than sabotage or embezzlement!



# PHOTOGRAPHY OF THE MONTH

## JUNGLE BOOK

Alexander Korda Production, United Artists Release (Technicolor.)

Directors of Photography: Lee Garmes, A.S.C., and W. Howard Greene, A.S.C.

Seldom has a picture been so appropriately publicized as "Jungle Book," to which the catch-line "It's out of this world" has been applied. Very probably our friends in India will report that what the Kordas, Lee Garmes and "Duke" Greene have put on the screen has very little in common with the actual India in which 300,000,000 find much more of tragedy and problems than of romance and adventure, but even they cannot deny that the film presents some of the most magnificently Technicolored fantasy that has ever reached the screen.

It would be hard to find a better man in the industry than Lee Garmes, A.S.C., for bringing to the screen the elusive, other-worldly quality a fantasy like this demands. In "Jungle Book," he is very ably seconded by the Technicolor wisdom of W. Howard Greene, A.S.C., the imaginative production design of Vincent Korda, and the sets created by art directors Jack Okey and J. McMillan Johnson. Their use of color is especially interesting: the color is laid on with a lavish brush, yet so skillfully planned and photographed that while conveying an effect of vivid warmth, it never becomes garish. Indeed, for all the color, the dominant impression you carry from the theatre is one of vibrant, but subdued color. The people who so badly mis-handled the art direction of "Louisiana Purchase" ought by all means to be compelled to see "Jungle Book" and study it to see what really clever artists can do in designing for Technicolor.

Camerawork and lighting as Garmes and Greene have handled them are excellent, though at times there was perhaps a bit too much reliance on the traditionally flat Technicolor lighting. The result is, however, always magnificently pictorial. The effect-lightings were interesting, and the special-effects work of Lawrence deserves commendation. William Hornbeck's skill in editing is also noteworthy, especially the way in which he has intercut scenes employing a real python with others in which a "prop" reptile was used, and in conveying—almost entirely through cutting—the impression that "Mowgli" and the black panther were friends when in actuality there is scarcely a scene in which the two actually appeared together!

## SABOTEUR

Frank Lloyd Production for Universal  
Director of Photography: Joseph Valentine, A.S.C.

From the opening title to the final fade-out this latest of Alfred Hitch-

cock's suspenseful melodramas pays tribute to the photographic ingenuity of director of photography Joseph Valentine, A.S.C. His imaginative effect-lightings and pictorial sense do a great deal to establish and maintain the mood of the picture. He has turned in some of the finest work—technically and pictorially—that he has done in many months. He does uncommonly well by the players—especially Robert Cummings, who has never appeared to such good advantage. He does well by Priscilla Lane, too, though the make-up department's ideas of how she should wear her hair certainly didn't give Valentine any help in glamorizing her.

But Valentine's real value to the picture is not so easily detected at first sight. Only when you sit through a second screening are you likely to begin to realize how his picture-minded ingenuity has contributed production value to almost every sequence. The opening title—simplicity itself, yet enormously effective in establishing the picture's mood—sprang, we understand, from his fertile imagination. In the opening sequence, his deft use of a backing to suggest a vast modern airplane-plant is noteworthy. Repeatedly throughout the picture he has used his knowledge of the camera's vast—and usually unutilized—powers of suggestion to obtain important production effects with a minimum of actual construction. The impressive climaxing scenes of the chase inside the Statue of Liberty, for instance, if you analyze them, were done with an incredible minimum of actual construction: the set scarcely extended an inch beyond the widest long-shot coverage of the camera. In other scenes, he has repeatedly gotten from almost nothing effects the average cinematographer and art director would obtain only with extensive construction. And he has done it convincingly.

In addition, "Saboteur" has some of the most remarkable examples of exteriors convincingly filmed on the stage that we have ever seen. The rain sequence outside the blind philosopher's cabin is one of them; another, still more spectacular, is the entire sequence centering around the ranch-house and its swimming pool. The waterfall sequence (with the exception of the long-shot in which the hero leaps into the river from a high bridge) is another done entirely on the stage. Much of the picture utilizes excellent process-work for which, so we understand, Valentine was also responsible. In all, we can recommend "Saboteur," not only as an excellent "cops-and-robbers" thriller in the Hitchcock manner, but as an outstanding example of the valuable contributions a clever cinematographer can make to a production—if he is given a chance to do more than just photograph.

## THE INVADERS

Ortus Films Production, Columbia Release.

Director of Photography: Frederick Young, F.R.P.S.

From every viewpoint, "The Invaders" is one of the most remarkable films of the season. Much of it was filmed on actual locations in Canada, and the interiors were filmed partly at the Associated Sound News Studios in Montreal, and partly at the D. & P. Studios in England. Director of Photography Fred Young, well known in this country as probably England's foremost cinematographer, has done a magnificent job under conditions which could not have been of the easiest. His handling of the exteriors is really inspiring; they are some of the finest examples of exterior photography we've seen in a very long time—and what a delightful change these unfamiliar Canadian locations are from the too-familiar ones to which most Hollywood troupes are restricted, not to mention the ever-present stage-built exteriors which we must so often substitute for real locations in our effort to "be commercial." Even if it didn't have a strong story and a series of truly remarkable performances, "The Invaders" would be well worth seeing just for the refreshing exteriors.

Young's treatment of the film—exteriors and interiors alike—is almost flawless. In a picture in which melodramatic realism is the dramatic keynote, he keeps throughout to a mood of almost documentary reality in his camerawork and lightings. Even in scenes you know must have been made in the studio, he manages to escape conveying a "studio-lighting" impression, and makes one feel he is privileged, instead, to peep in on a slice of real life. Yet with all that, Young deals very skillfully indeed with his players. Even in Hollywood Laurence Olivier, Leslie Howard and Raymond have not appeared to any more advantage. And in scenes which permit it, Young has achieved some excellently pictorial effect-lightings.

Another notable feature of the film is the comparatively small amount of special-process photography which seems to have been used. The introductory action on the Nazi submarine, which—especially its destruction by R.C.A.F. bombers—we would probably have done in miniature, is done in full-scale construction. The picture gains measurably thereby. The torpedoing of the merchant-ship is also apparently full-scale, rather than miniature, and is probably clipped from some official German-made scenes of torpedoing in either this or the last war. There are a few scenes which make use of process backgrounds, but they are held to a minimum, and handled very capably, to boot.



All told, we urge you to see "The Invaders."

## IN THIS OUR LIFE

Warner Bros.-First National Picture.  
Director of Photography: Ernest Haller, A.S.C.

Special Effects by Byron Haskin, A.S.C., and Robert Burks, A.S.C.

"In This Our Life" is by no means the most spectacular achievement that Ernest Haller, A.S.C., and Bette Davis have shared, but it is an extremely workmanlike job on both counts, none the less. The picture's locale and mood tend to keep Haller from making the picture as pictorial as many he has filmed, but his work retains the smooth finish that characterizes his style. This reviewer particularly liked his compositions, which were dramatically very graphic. His lightings were excellent, too, and deal excellently with the players.

Working with the highly cooperative John Huston, Haller had an unusually free hand with the pictorial details of the picture, and the way the compositions are used to enhance the dramatic value of the action, and the smooth visual flow that is maintained throughout—with virtually no useless camera-moves—is something that will bear very careful study.

## THE WIFE TAKES A FLYER

Columbia Production.

Director of Photography: Franz F. Planer, A.S.C.

In photographing this picture, Director of Photography Franz Planer had the always difficult problem of handling a story which intermingles melodrama (against a tragic background) with the broadest of farce-comedy—the sort that the Germans (who unfortunately won't see it) used to call a "grotesk." He has handled it very expertly, indeed, especially when you realize how hard it is to build a visually melodramatic effect-lighting when you know that in the middle of the scene your heavy is likely to get a swift kick in the pants!

The result is naturally a series of compromises between the low-keyed lighting the melodrama requires, and the much higher key the comedy demands. Planer has handled the problem very smoothly, with the result that the picture is not only diverting entertainment, but a decidedly more than adequate example of good camerawork.

Inevitably, it is in his effect-lightings that Planer really does his best work in the picture. The blackout sequence, for instance, is probably the best photographic representation of a blackout that has yet reached the screen. He deals very well, too, with his players, from Joan Bennett down the line to the thirty inhabitants of the old-maids' home. The result, all told, is one which, while it probably won't win Planer an Oscar, will certainly win him added credit as a very capable workman.

## WOMAN OF THE YEAR

Metro-Goldwyn-Mayer Production.

Director of Photography: Joseph Ruttenberg, A.S.C.

After most of the rest of the country had seen "Woman of the Year," MGM finally got around to revealing it to the Hollywood press. And we can duly report what most of the country already knows—that "Woman of the Year" is a very diverting piece of entertainment, and an outstanding example of film-craftsmanship.

Joe Ruttenberg does his usual excellent job with camera and lighting. Some of his compositions and effect-lightings are so far above par as to demand careful study. His treatment of the stars is excellent; in fact, he does more to glamorize Katherine Hepburn than we'd have thought possible.

One feature about the picture that we liked was the extreme smoothness of the visual presentation, both in the way the scenes flowed smoothly together, and in the excellent use of purely visual action—often for long sequences—to advance the story and characterizations. Many a director and scenarist (to say nothing of producers) should take lessons from director Stevens and cinematographer Ruttenberg in this respect.

## JUKE GIRL

Warner Bros.-First National Production.

Director of Photography: Bert Glennon, A.S.C.

Basically, "Juke Girl" is just another of those showcases for Warner Bros.' favorite stock company, presented with Bert Glennon's accustomedly efficient photography. But as the action advances, the technically-minded will find plenty of details to interest them, regardless of whether or not the story does. Chief among these details is the handling of the climaxing lynching sequence, both by Glennon and by director Kurt Bernhardt and film-editor Warren Low.

Glennon's effect-lightings in this sequence are particularly good, and the rhythmic handling of direction and cutting make the sequence one worth studying.

## KATHLEEN

Metro-Goldwyn-Mayer Production.

Director of Photography: Sid Wagner, A.S.C.

There's often a great difference between conception and execution; one may easily be at fault while the other is flawless. "Kathleen" is a case in point. Sidney Wagner, A.S.C., has given the production a photographic mounting which, from the standpoint of execution, is beyond criticism. He has made his scenes excellent examples of fine, modern major-studio photography. He has presented his players to excellent advantage. In fact, he has done—and done very well—everything that is called for by the conception of the story which

evidently pleased director and producer.

But to this reviewer, at least, that conception is basically wrong. It lacks visual imagination in presenting a story which is to a great extent based on the imagination of the central character. Despite a somewhat hackneyed plot, the story has at least one clever premise: it visualizes the rather high-flown imaginings of an adolescent girl, and then follows them with a presentation of how the action she had just been day-dreaming about happened in prosaic actuality. Both the writing, direction and playing of these day-dream sequences are cleverly handled. But the photography is not. Visually, there is nothing to differentiate the imagined from the real except different dialog and action. Yet it would be so easy to have handled the photography of these dream sequences to have given a visual impression of the idealized unreality of a young girl's dream—! Had this been done, we'll wager the picture would have seemed a good deal more significant to the many lay reviewers who, as it is, dismissed it with the sort of faint praise which is so embarrassingly damning. We can't help wondering why, with the aggregation of pictorial talent MGM boasts, this sort of treatment was not carried out, or why, perhaps, Wagner was prevented from using what any cinematographer must naturally have visualized from a single reading of the script.

## THE FLEET'S IN

Paramount Production.

Director of Photography: William C. Mellor, A.S.C.

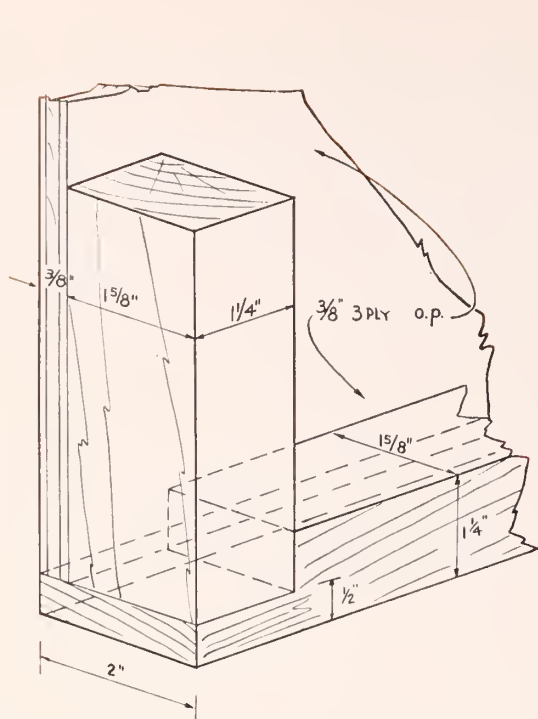
Cinematographer Mellor has given this production what the trade-paper reviewers like to term "a 'class' mounting." There's a deft polish to his work which is rapidly becoming almost a trade-mark for this rising young cinematographer. Without striving to be overly pictorial (which would be out of place in a production of this type) he manages to make the most out of every set and scene, and subtly to convey the impression that it's definitely an "A" production. His lighting of even some of the less photogenic sets is a factor that adds measurably to the production.

His treatment of the players is characteristically excellent. If Dorothy Lamour has ever appeared to better advantage, we've unfortunately missed the film in which she did so. Yet in obtaining this effect, Mellor hasn't in the least sacrificed any of the other players.

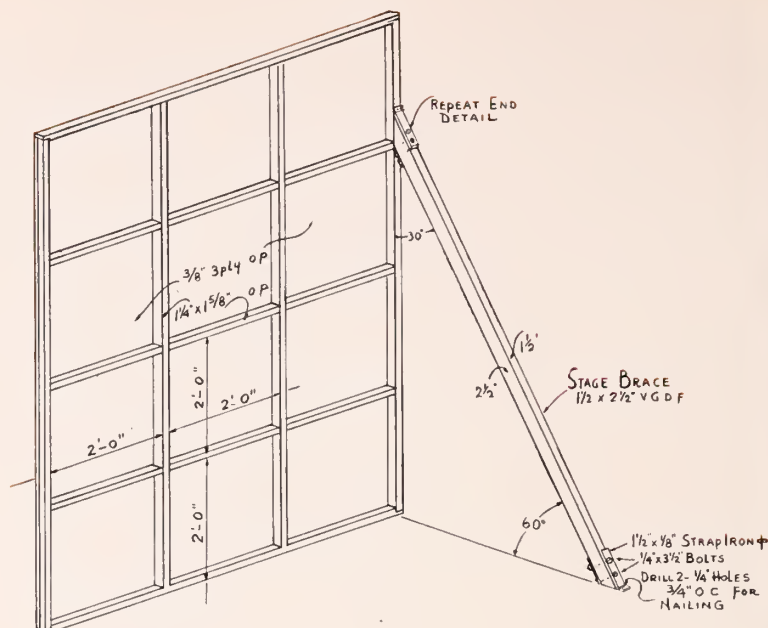
The directorial handling of the film—always a difficult point in making a film musical—makes one doubly regret the passing of the late Victor Schertzinger, who surely had a unique touch in directing musicals. The way he and Mellor have interwoven the musical and specialty sequences with the dramatic part of the production is outstanding. However, in the specialty dance by Lorraine and Rognan, the work of either director

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F.S. CORNER DETAIL



REAR VIEW.  
ISOMETRIC DRWG OF  
6'-0" x 8'-0" STUDIO FLAT.

# Simplified Set-Building For Defense-Film Makers

By JACK OTTERSON

Supervising Art Director  
Universal Studio

**N**OW that amateur movie-makers are turning their attention increasingly to the making of Civil Defense films, they're finding themselves faced with a problem most of them have never had to consider before—set-building. You can't very well set off an incendiary bomb in your living-room just to get a picture; neither can you squirt hoses and chemical fire-extinguishers around to show the approved fire-fighting technique—and still remain on good terms with your wife. So the building of sets for scenes like this becomes a necessity. And once you've tried it, you'll find that for almost any other type of serious scenario filming it's a decided advantage to use a set, rather than an actual "practical" interior. You'll be able to light things more effectively; you'll be able to get more effective camera-angles; and you'll find you can build your set specifically to suit the needs of action and composition, rather than adapting them to fit the limitations of an existing room.

Building sets isn't nearly as difficult a proposition as it first seems. It isn't particularly expensive, either, for if you follow professional practice you can

build your sets of simple, standardized units which can be rearranged, reassembled and redecorated to give you years of service with a surprisingly small first cost.

The secret of professional set-construction is the use of "flats." These are standardized wall-panels which, with the addition, where necessary, of equally standard panels with doors, windows, etc., can be assembled to make a room of almost any size or shape you want. Once assembled, they can be painted, papered, or given almost any desired appearance, and mouldings, cornices and similar trim can be applied as effectively—and even easier—than on the wall of a real room. And as every studio in Hollywood has proven, they can be disassembled and stored, and re-used time and again, each time giving the visual effect of a completely new set.

The beginning of a "flat" is a piece of plywood. Officially, it's 3-ply veneer. And like all lumber, it comes cut into sizes which are multiples of two feet. The handiest size to use is a panel four feet wide by whatever height is suitable for the widest-angled long-shot you propose to make; 8 or 10-foot height is

usually adequate, though of course you can go higher if you want to.

On what will be the back side of this panel, nail a rectangular rim of heavier boards—2x2's, though the stock we use professionally for this actually measures 1 1/4 x 1 5/8"—and reinforce things with horizontal cross-braces (also 2x2's) every two feet. And there's your flat!

Give the front side a good coat of shellac (if you can still get the shellac!), and your flat is ready to use.

However, it won't stand by itself, and even if you assemble several flats to make an L-shaped two-walled set, you'll need some bracing. A six-foot length of 2x2 will provide this. Mortise off the ends at an angle so that the brace can be used at about a 45-degree angle between the floor and the back of the flat. Then fit the ends of your brace with six-inch strips of fairly heavy strap-iron, bent to the proper angle and fitted with holes at each end through which nails can be driven respectively into the frame of the flat and into the floor.

If you want doors or windows in your set, you can use either of two possible methods. In either case, you can get real doors and windows, with the necessary sills, mouldings, etc., from your local lumber and millwork company, or very probably pick them up used from a house-wrecking firm very cheaply. Then you can either mount them in special, permanent flat units a few inches wider than the door or window in question, or you can put them into place as necessary, between two standard flats, and with the wall-space above and (in the case of windows) below filled with special sections built like a regular flat, but shorter. Of the two, the first method is probably simpler and more practical.



If you want to make a set representing just a single wall of a room, take enough flats to give you the desired width for your set and put them together, edge to edge. Prop them solidly upright with the 2x2 angle-braces you've already made, and nail the sections firmly together with nails passing through the two adjacent frames on the back of the flats.

For this, and most other nailing in assembling flats and their braces into sets, use the special double-headed nails we use in the studios for this purpose; they're often called "jew nails." In appearance, these are like ordinary, fairly heavy nails, but they have two heads, one above the other. You drive the nail in up to the first head, getting a good, solid fastening as though you had used an ordinary nail. But—when you want to dismantle your set, there's the second head projecting about a quarter of an inch above the plank, so you can quickly yank the nail out without damaging either the wood it is in or the nail itself.

To cover the gap where two adjacent flats join, apply a strip of heavy finishing-paper—or a strip of paper tape or even butchers' wrapping paper if you can't get what we use—to cover the joint. We often use this "blank stock" to paper over the whole surface of the flat before finishing with a coat of paint or paper.

Now you can paint or paper your set-wall in any way you want. In the studios, we usually use a simple water-color paint, rather like kalsomine, in any desired color. This can be washed off by simply applying water. If we want to reproduce a plastered or stuccoed wall, we simply mix in a bit of sawdust, to give the necessary rough texture.

Any kind of wallpaper can be applied over a flat. With modern wallpaper, you can not only get the conventional wallpaper patterns, but flat colors, and special papers which imitate all sorts of other textures—wood panelling, tile, and even marble. You'd be surprised how many of the "marble" walls of movie banks, hotel lobbies, and the like, were simply "marbelized" wallpaper! And to the camera—even in color—they're every bit as convincing as the real thing.

As you use and re-use your flats, you'll find that often several layers of wallpapers can be applied one after another before the flat needs refinishing. When it does, hot water or steam, assisted by a good scrubbing, will remove the paper. Then re-shellac your flat, and it's ready for more use!

If you want to make an L-shaped, two-walled set, it is a simple matter, of course, to arrange two walls made of flats into the desired right-angle arrangement to make your set.

More often, you'll want a three-walled room. Of course you can do this with flats, too. Just arrange your wall-panels to make the necessary U-shaped set, and there you are.



With this type of set, it is often a good idea to run a fairly sturdy brace (above the camera-angle, of course) across the open end of the U. This has two advantages. In the first place, it makes your set more rigid. In the second place, it gives you a scaffold from which you can hang lamps for overhead front-lighting.

Sometimes when you're working in a set like this, you'll find you have to reverse your camera-angle, and shoot toward what would be the open end of the U. For this, we use what we call a "wild wall." For that matter, we use "wild walls" often enough to provide the second or third wall of a two- or three-walled set. A "wild" wall is simply a wall of a set which is built as a unit, separable from the rest of the set. Put in place, it completes the set. But by merely pulling out a few nails and removing the supporting braces, the wall may be removed to give the camera-crew more room in which to work. If there is any overhead scaffolding for the lamps, set and scaffolding are completely separate units; the wall may be removed without disturbing the lamps and their catwalk. For that matter, a "wild" wall may be—and often is—swung completely from one side of the set to the other, as needed, so that a single wall provides two sides of the set, according to the camera-angle.

In most instances, you'll find it an advantage to plan things so that you can place some overhead lighting-units (especially spotlights, if you have them) along the top of your set-walls to provide back-lighting on the players and some of the lighting on the set-walls themselves, as well. Professionally, we do this by hanging a railed catwalk or platform directly above the set-walls, but

With the exception of the railing, this set is built of standard "flats." Note how window-panel is recessed, and corner treatment, to give breaks in contour for better lighting. Notice also how lamps are hung on wall.

usually suspended by one means or another from the ceiling girders of the sound-stage. This catwalk may or may not be anchored in some way to the set; most often, it isn't.

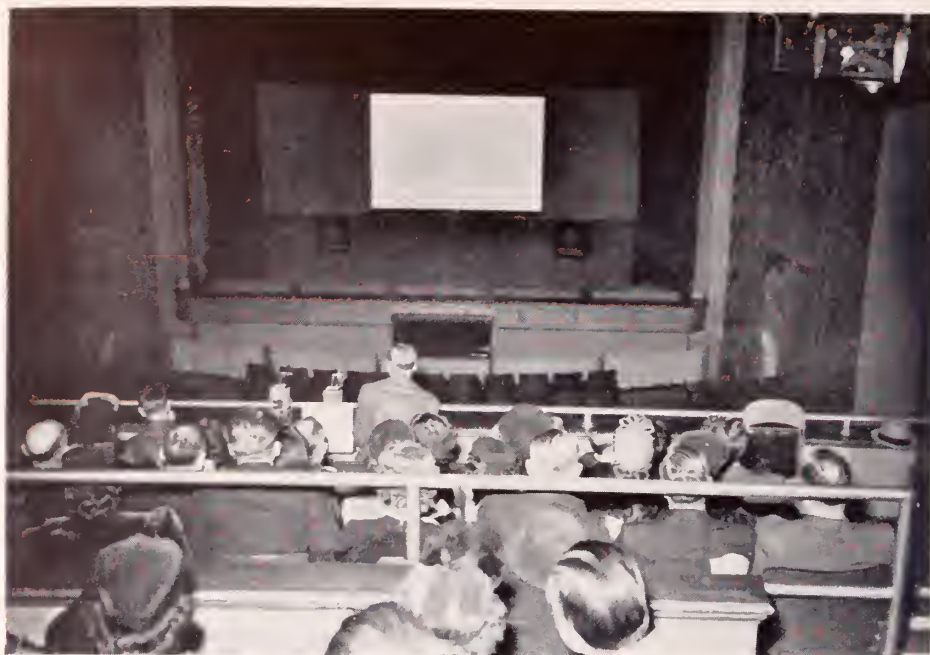
But for amateur use, you'll seldom need to go to this trouble. Instead, drill holes in the upper framing of your flats, spaced about two feet apart, into which you can fit the bases of some of your lamps. Better yet, use clamp-on reflectors—if possible fitted with concentrating "snouts"—in which you can burn either No. 2 or preferably No. 4 Photofloods. And an ordinary step-ladder will give your electricians a chance to reach up to adjust these lamps as your cameraman may direct.

Often in closer shots you'll find you need some back-lighting from a lower angle than is possible this way. There's a professional gadget that fits this, too. Ours is made of metal, but with most amateur lamps, you'll be able to use fairly light wooden construction. The gadget is simply a fairly long pole with a hook at its upper end. The hook fits over the top of the flat, and the pole or rod extends down along the wall into the set, with a provision at its lower end for mounting a lamp which can be directed as necessary to provide the back-lighting you want. The cable feeding the lamp, of course, extends upward and over the top of the flat, safely out of camera-range.

Now a simple set that consists of straight, flat walls may be adequate for the action, but it isn't always conducive to the most effective sort of light-

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## 8mm. ON A 10-FOOT SCREEN!

By ROME A. RIEBETH

Minneapolis Cine Club.

**H**OW large can 8mm. movies be screened? The Minneapolis Cine Club has proven that with modern equipment and skill this smallest-sized of home movies can be successfully given theatre-size presentation. The occasion was the Club's Annual Winter Show, where 650 guests in the auditorium of Minneapolis' Women's Club had the surprise of seeing 8mm. movies projected on a beaded screen more than ten feet in width.

The show-house was packed to the rafters as the 75 members of the MCC put on an epic performance to their audience. The show, a replica of professional film fare, made a name for itself with the audience and will be repeated again by popular acclaim.

The Minneapolis Club's membership, about evenly split between 8 and 16 millimeter camera owners, has for the past five years made amateur movie history with their well planned and executed 16 millimeter showings. But heretofore the technical difficulties had always banned an 8 millimeter show.

Undaunted by this factor, the "eights" decided that it was possible to present their film to the public and they called on the finest technical advisors to help them.

Movie-wise semi-professional and professional film-makers laughed at the idea and said that it couldn't be done, and if tried the show would be a definite flop.

Stubborn members took up the cudgel to prove to the world that the experts didn't know everything. The accumulated knowledge of the amateurs was pooled to

bring into being one of the first 8mm. showings of theatre calibre in the country.

Primarily it was decided that no concession would be made to quality and that titles, pictures, sound equipment and presentation would be of the finest . . . or else.

A screen size of 10x12-ft. was decided on as the most suitable from the viewpoint of the spectator. Using this as a starting-point, the technical side of the show was worked out.

There was plenty of excellent film available in the libraries of the 8mm.-shooting club-members, and it was only a matter of picking and choosing to select the best and most suitable film for public presentation.

This was old stuff to the group and a well-edited show was put together in jig time, musical scores arranged and sound-effects added.

The entire "sound-track" was then scored on acetate disc records, and the show was ready to roll.

A critical group gathered in the darkened auditorium of the theatre to check the final details of the show theme, and made sure the equipment was readied to meet any technical difficulties that might be experienced.

The sound-equipment used was for the most part manufactured by the members themselves. It was chosen over professional equipment because in many cases it incorporated more advanced ideas. The "sound-track" met all expectations and was accepted by the group. But the speakers used were unsatisfac-



Left, flash picture during actual screening, showing projectors on front row of balcony, and loudspeakers flanking screen. Above, top, Projectionists Ralph Bowman and John Flekke at work. Note step-up transformer and voltmeter; middle, Soundman Ray Rieschl recording sound-effects and music on discs to accompany films; bottom, Carroll Davidson, Arthur Anderson, and President Ralph Sprungman kibitz while Fred Grabow checks editing of films for the show. Photos by Ormal I. Sprungman.

tory, and again a member's private theatre was raided to obtain first-class equipment.

The projectionists, who had worked out every angle of their job with an eye to complete visible entertainment, were disappointed in the power of their projectors.

The projection committee had done considerable experimenting with a couple of Eastman Kodak model 70-D projectors, and decided that special lens equipment would make these suitable to the show's needs.

Heavy lamps, giving 750 watts of illumination were obtained and special lenses were tried. The screen was located 70 feet away from the projection-booth and it took everything the projectors could give to enlarge the picture to the proper size and still maintain brilliance.

After considerable work with special lens equipment it was finally decided to turn back to the original lenses furnished with the machines.

The image projected was of the correct size, and the only thing lacking was the snap and brilliance usually associated with beaded screen projection.

One of the projectionists suddenly had  
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# Testing the Auricon Sound-Camera

By WILLIAM STULL, A.S.C.

Left: with Val Pope at the camera and Ray Fosholdt directing, Walter Bach mixes sound for a 16mm. talkie scene. Center: the mike-boom swings the microphone in to record dialog as the camera films a two-shot. Right: Ray Fosholdt and Val Pope check the lens before making a scene. Photos by Harold O'Neal.



**A**LL too often there's a world of difference between a manufacturer's demonstration-reel of a new equipment like the Auricon 16mm. sound-camera, and the way the same outfit will perform in actual field service, in the hands of people more interested in making a picture than in turning out a perfect example of substandard sound-recording. Not that the manufacturer will necessarily cheat—but the difference between the controlled, almost laboratory conditions under which most demonstration tests are most conveniently made, and the far less controllable conditions of actual service can easily make things embarrassingly misleading, whether you view it from the manufacturer's or the buyer's viewpoint.

For this reason, when the opportunity presented itself to make a test of the newly-developed Auricon sound-camera, under conditions of my own choosing, I naturally leaped at the chance. In the demonstration reels I had seen, the outfit had performed unusually well, giving an excellent picture, and sound a great deal better than any one has a right to expect from single-system 16mm. recording. What would it do under conditions comparable to those that might be met by an amateur or semi-professional group making a picture for Civil Defense purposes?

In mid-April I had been invited to take charge of a meeting of the Long Beach (Cal.) Cinema Club, choosing my own subject. As this Club had just completed photography on a Civil Defense picture which was to be released in sound, I decided that the group would be interested in hearing for themselves the latest developments in 16mm. sound-recording. As the very latest thing in this direction was the new Auricon camera—the first such outfit engineered for serious professional and advanced amateur use, yet marketed at a price comparable to that paid for a first-class 16mm. silent camera—I was anxious to include it.

The E. M. Berndt Corporation very kindly placed at my disposal the first of their new cameras. The Photo Research Corporation granted me the use of their small studio. And with the aid of the group from the Long Beach Cinema Club who had been active in making the Club's incendiary bomb production, we made a little 200-foot Kodachrome talkie which deliberately put the Auricon camera over the bumps rough-shod.

Let it be said here and now that the new camera emerged with flying colors (no pun intended!) despite the fact that the cards were stacked against it in plenty of ways. In the first place, the studio—intended primarily for still-photography and demonstrations of the use of the Norwood exposure-meter—was not soundproofed. Its acoustics could have stood a good deal of improvement, too. And instead of taking the safe and simple course of making a single set-up, as nearly as possible perfect for both picture and sound, and moving our actors in and out of it, we deliberately broke our 200 feet up into no less than eleven completely different set-ups, shooting exactly

as we would with a silent camera. Improvising continuity, dialogue and business and we went along, we made the whole picture in less than three hours.

The only "break" we gave the sound was that we used our microphone on an overhead boom, professional-style, instead of on a floor stand, and that we let the Berndt organization's Walter Bach, who brought the camera, do the sound "mixing." But before the evening was out, any of several of the amateurs present, who have added to their movie-making hobby that of home-recording on acetate discs, could probably have done quite as well.

Since our problem was to give to each  
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Three of Maurine's "screen-closeup" portraits. Notice lighting and effect of animation.

## Go to the Movies—If You Want to Learn Lighting

By HAL HALL

**F**OUR years ago the girl who was "stand-in" for Jeannette MacDonald had an idea. She decided to do something about it. As a result of that idea and that decision, she is no longer an unrecognized stand-in, but has become Hollywood's most famous woman portrait photographer.

Th girl is Maurine (all the name she's found professionally necessary since the great and near-great began beating a path to her studio door) and the idea that started it all was that portraits—especially of picture personalities—shouldn't be presented with the old-fashioned, conventional "portrait lighting," but given the same treatment you'd see in a motion picture close-up photographed by an ace Hollywood director of photography.

In four years that idea and that technique have put her on the photographic map in a town where conventional portrait photographers come at less than a dime a dozen. No wonder she advises photographers, professional or amateur alike, to adopt the same method. In other words, to study the art of portraiture in its best modern application by going to the neighborhood movie-house and observing what the masters of motion picture photography do in the way of lighting and posing when they photograph a motion picture star for the screen. But let Maurine tell it herself.

"Before I became a stand-in for Miss MacDonald," says Maurine, "I was tremendously interested in photography. I hadn't been working as a stand-in long when I found myself trying to figure out



Maurine and her camera.

why the cameramen and electricians were changing this light, turning on that, putting a silk over this one and spreading the light from another lamp. I began asking questions. All the cinematographers—Bill Daniels, A.S.C., George Folsey, A.S.C., Clyde DeVinna, A.S.C. and the rest—were very cooperative. They told me the reasons for the various ways in which they were arranging their lights. They explained why a high key had to be used for one mood and a low key for another.

"I never bothered asking the 'still' photographers questions, for I had an idea that no still photographer ever got the results that were attained by the cinematographers in their closeups. That was what intrigued me, for I couldn't see why, if you got an effect in a movie, you couldn't duplicate it in a still. Finally I began to learn a lot about lighting; so much that when I was standing in for Miss MacDonald I would frequently save the cameraman and gaffer many steps by telling them a light was hitting me too hard from one angle or that another one was in the wrong place.

"Well, this went on for four years. One day a cinematographer asked me why I didn't become a portrait photographer. I didn't answer him right away. But within five minutes I had made up my mind to quit being a stand-in and to become a photographer.

"I quit work the next day, looked around for a possible location for a studio. A friend gave me an old portrait camera which had no shutter. I made a cardboard shutter, and it worked. I found a one-room place, moved in with the old camera, two borrowed lights—and when I hung up my sign I had a total bank-balance of \$3.75. But I also had my idea that if I could give screen close-up quality to my portraits I would be a success.

"Well, I did \$350.00 worth of business my first month. Each month thereafter I did better. I did no advertising, but the people who came to me told their friends about how their pictures looked like screen closeups. That sent me business. And then one day Myrna Loy came to my studio. For that sitting I received a check for \$1000. I knew I was on the right track, so built a darkroom to celebrate!

"It really isn't difficult to make portraits that have the screen-closeup style. I know nothing about the technical terms of photography. As a matter of fact, I have never read a book on photography or lighting. I don't believe I could give a technical definition of composition to save my life. But I do know when a picture

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Spadework and spraying are important  
—to the garden and to the picture!



## Filming Your "Victory Garden"

By WILLIAM F. KRUSE

**T**HOUSANDS of amateur movie-makers employ their No. 1 hobby to keep a permanent record of the joys of their other pastimes. Hunters become wildlife photographers, yachtsmen go in for marines—and then they and their kind give advertising managers good reason to write a whole series of camera ads around the theme of "Movie Making Opportunity No. 1492," showing lovely ladies and other hobby highlights, as lure for more and better film exposures.

Other movie-makers use their hobby in the service of their jobs,—engineers, doctors, teachers, explorers, and many more. Maybe it should cloud their strictly amateur standing, in the manner of de-emphasized collegiate football amateurs—but not always is their photography good enough to warrant such a ruling. Maybe the whole amateur idea is a dodo, anyway, and everybody should be judged by the quality of his work, whether or no he collects his reward in pay-checks, expense vouchers or pretty ribbons! Some of these semi-pro amateurs are really *good* cameramen, and good at telling a story with film, too, because they really know their story, and they know why it needs telling.

A case in point is James H. Burdett, his avocation—movie-maker. That should always come first. His vocation for many years has been to direct the work of the National Garden Bureau, which is dedicated to the noble aim of making ten useful plants grow where only one half-hearted seed sprouted last year. And his avocation has always tied in beautifully with his job which, maybe, makes him a semi-amateur. But not his films. Nothing "semi" about those lovely Kodachromes of flowers and vegetables, and their human worshippers! The pictures are really good.

Came the war. Vocation, avocation,

all had to be tied into the national need, by friend Burdett as by all other Americans. To his other jobs he had added the editorship of a daily garden column in Chicago's brand-new "Daily Sun," a fine column, by no means the least of the fine features of a fine new journal. And of course the column soon beat the tomatoes for Victory Gardens, and lots of them.

Burdett and some of his neighbors had been gardening for victory for many a year. It's the kind of people they are. And they had been making motion pictures of the process, interesting, human, beautiful films, that showed every step in the process of making a good garden grow good vegetables and flowers. They had taken their movie-making no less seriously than their gardening. Each shot was a story-telling picture. Composition was good, exposure likewise, and lighting sometimes something to write home about. The accompanying pictures tell why, to some extent. "Flat lighting only for Kodachrome" may be a good rule for average amateurs, but not for crack photographers with a message! Anyway there is no rule against reflectors, even in Hollywood. So Burdett used reflectors—to light up a pretty gardener's latest crop of sunburn into color-temperature harmony with her first crop of tomatoes. Or something.

Conversely, too, where there was too much color, too many centers of interest, he introduced the complementary-colored neutral background. In plain language, he was ruthless enough to make a pretty model block herself out of a picture intended to emphasize the mere flowers she had just picked, by holding a background cloth that gives a pleasant color-contrast. Such determination is the mark of a real photographer. Most cameramen I know would have blocked out the flowers!



Note use of reflector in making closer shots. Below: Kodachrome climax—the harvest of colorful flowers and equally colorful vegetables.

All kidding aside, this is an important, well-made film. And timely! In days of old, when wars were fought by professional armies and the rest of the nation tried to follow the line of "business as usual," one of the greatest generals said bluntly that "an army travels on its stomach." Nowadays, wars involve whole peoples, and the national bread-basket looms equal in importance to the munitions chest. To be sure, it takes more than food to win a war, but it is equally certain that any nation that

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Frame enlargements from Mr. Oswald's quickly-made newspaper picture of the celebrated "Tulip Time" Festival.

# Applying The Newsreel Cameraman's "Sixth Sense" To Your Own Movies

By JAMES R. OSWALD

A MOVIE should be planned well in advance of the actual filming, so the experts tell us. This is undoubtedly a wise procedure to follow, when possible, for those who want good continuity in their films. But how often have you spent a great deal of time outlining a script or a mental picture of the desired results? Again, how often have you been disappointed when the time came to do the actual filming, because of certain circumstances impossible to foresee? I'll venture to say every photographer has suffered these disappointments many times. Vacation movies and pictures taken in new surroundings present this problem in particular. With this thought in mind, one can help remedy the situation by learning how to make the most of conditions as they arise. You will reduce editing to a minimum and still retain a pleasing sequence arrangement if you will develop what I have termed, a "photographer's instinct." It's the same "sixth sense" that enables a professional newsreel cinematographer to "cover" a news story "cold"—without benefit of a script—and bring back a complete picture-story of the event.

Based on my own experience in filming the famous "Tulip Time" festival which is held annually in Holland, Michigan, at the peak of the tulip season, I found this so-called "instinct" invaluable. I believe the conditions under which it was filmed are similar to those encountered in nearly every unplanned movie.

Arriving in Holland one bright morning with all the usual photographer's paraphernalia, including a plentiful supply of Kodachrome, my first move was to take the short drive to the celebrated tulip farms which were destined to play no small part in my production. Acres of blooms of every color, all planted in orderly rows, enough to delight the heart of every garden lover and photographer alike! What would make a more appropriate opening for my film? I angled the camera for a long-range shot from a high vantage-point for my introductory view. This completed, a few breathtaking close-ups and semi-closeups soon suggested themselves as the ideal follow-up scenes. But first a couple of medium-shots to make the approach to the flowers more gradual for my future audiences. Next, I planted the camera firmly on the tripod, now only a foot or two above

the ground. I buzzed away as the tulips with their contrasting green foliage swayed slightly in the breeze. As I peered through the viewfinder, I could already picture the colorful blooms filling my entire movie screen. A few similar scenes were intermixed with shots of the crowd of awe-inspired flower-lovers examining the buds. I then hastened back to town for the big festival program which was already under way.

Once again in the center of activity, the next step was to make mental notes of choice viewpoints and lighting conditions for the events which were to follow. To climax the film I selected beautiful Centennial Park as the most pleasing background for my parade scenes. Natives of all ages in their gay Dutch costumes, complete with wooden shoes, presented ample opportunity for interesting sidelights. I made the most of each opportunity, quickly but carefully choosing the best camera angle and locating the tripod firmly for rock-steady pictures.

As tiny drum majorettes began to twirl their batons in rehearsal for their big show, I knew it was also the cue for mine, and once again swiftly swung into action. With the crowds gathering thick and fast, I hurried back to my established "base" which I previously had chosen to hold for the parade scenes. The camera, once more on tripod, was aimed directly down the street, at an angle such that the marchers would walk into and across my picture. From my place on the parkway I was all set to "shoot the works."

Beginning with the approach of the motorcycle escort through to the last participant, the entire sequence was filmed most effectively with more than a quick glance at a passing parade. No attempt was made to swing the camera in order to follow the marching, and only once was the angle of view changed. The results proved this procedure wise. From the majorettes' bright satiny uniforms to the blue and pink costumes of the men, my viewfinder—and later my screen—was filled with gayety and color. Holding the exposure button to catch the motorcycle police bringing up the rear and the usual gathering of children following, was well in order. A few shots of the crowds breaking up and leaving

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# A New Twist To A Garden Scenario

By LEWIS B. REED

**I**T was Saturday afternoon. The sky was filled with California "liquid sunshine." There I sat with my new camera, a roll of Kodachrome, and a finger itching to push the camera-button. My thoughts were bitter as I looked out on the moist landscape. It was just my luck to get a new camera and then have it rain! Still, something had to be done to try out that new camera. In the war-bag were two daylight photofloods, which I had used for shooting color titles; only a small subject was lacking. Looking around the room I saw the most recent peace-offering to my wife—a large bouquet of mixed cut flowers. They were exceedingly colorful, fairly compact, and could be used in different arrangements. Everything was set to try the new camera.

The flowers were put on a small table in front of a window, so the daylight could be utilized for back-lighting, and the photofloods placed in the conventional forty-five degrees lighting position. A waste of film you say? Could be, but I remember hearing a noted authority on photography say it was possible to tell a story with moving pictures using only a statue as the subject. Anyway it was absolutely necessary to see what that new camera could do!

Shots were made of the flowers collectively and individually. In front of a mirror, and on a mirror. In pieces of pottery. Floating in water. In every way that could be imagined. No story was told, but a fine variety of cut flower shots were obtained, and it was found excellent dissolves could be made with the Eastman eight millimeter magazine camera.

You don't want to waste film taking what amounts to still pictures of flowers? You are right! Only why didn't you think of that on your last trip? Remember you returned with a lot of shots which were the same as stills? If you do it on trips, you might as well do it at home and save your tires!

The flower shots interested me. They had color, some originality, and gave me a clue to a method of practicing composition. They interested me so much that I finally decided to give the much publicized garden sequence a new twist, and



see if it wasn't possible to make something new in a "family at home" scenario.

My wife is a flower arranging addict. Flower arrangement doesn't mean a bunch of flowers dumped into a container, then pushed around to give a well-balanced appearance. It is a study in composition of simple, earthy objects. A successful composition can be made with a twig. Every angle will tell a story. Purchase a book on the subject and discover a new hobby, one that is inexpensive to follow. (My wife makes them from weeds and sticks).

After practicing the various basic principles of composition, you will find that all your other shots will benefit by your added knowledge. Instead of jumping out of your car and filming a desirable scene from the spot you land on, you will spend some time in properly framing and viewing the scene. Your shots will be more pleasing, lots of uninteresting shots will be passed by, and you will find film lasts much longer.

Filming chances are restricted today. Tires, cost of film, censorship, etc., all are limiting factors. Home means much more to us today than it did before. Let me suggest a scenario which is simple, needs no elaborate setting, is instructive, and stars your home and family. There are chances for originality in arranging scenes and lighting. You can work on it night or day, quit when you want to, and take as much time on each shot as you desire.

**Main Title:** "Story of An Arrangement."

**Note—**All indoor shots should be made within six feet of the subject. This for two reasons: (1) All unnecessary background is omitted. (2) The arrangement is the subject. Close ups will bring out every detail.

"The flowers that bloom in the spring" have nothing to do with the case except to prove even a wacky arrangement can make an interesting composition. Photo by Herbert P. Bond.

**Scene 1:** Build a flower arrangement from the bare receptacle to the finish. Vary your camera angles or use stop-motion to prevent monotony.

**Scene 2:** Show a series of arrangements in different parts of the house. Use mats to vary the backgrounds, or pieces of small pottery to add interest. The number of arrangements is limited only by your imagination.

**Scene 3:** A woman's hands are shown giving the last deft touches to an arrangement. Dissolve to her hands digging in the garden.

**Scene 4:** Continue with the old familiar garden sequence of hands planting, cultivating, etc. Show the garden growing from week to week.

**Scene 5:** A series of shots showing the harvest of flowers. They can be still growing, or cut and held. Closeup of one particularly fine group. Dissolve to the same flowers, now indoors, and in an arrangement.

**Title:** The End. (This could be faded in over the final scene.)

It is not necessary to use flowers in the foregoing. Vegetables from your Victory Garden could be used equally well. At any rate, I hope that this idea will at least suggest the filmic possibilities of your own home and garden. In any case, try flower arranging as a means to improving your eye for composition. Don't be afraid. No one has accused me of being a pantywaist yet! **END.**



# National Association Of Movie Clubs Gets Action!

## WHERE HAVE YOU MADE PICTURES?

The United States Government has asked us to place before our readers an urgent request for both still and motion pictures made anywhere outside the United States, as a vital aid to the Nation's War Effort. These pictures will be reviewed by Government authorities, and selected scenes duplicated by the Government. The original films, plates, transparencies or negatives will be returned, intact, to the owner.

This request is addressed to BOTH PROFESSIONALS AND AMATEURS, and to STILL PHOTOGRAPHERS, as well. Size and condition are relatively unimportant: 35mm., 16mm., 9.5mm. and 8mm. films are desired, as are still photographs (negatives or prints) and transparencies of any size. DO NOT ATTEMPT TO JUDGE WHICH OF YOUR PICTURES WILL OR WILL NOT BE USEFUL. Do not jump to the conclusion that just because you have "ordinary travel-shots," they may not be useful, or that because your pictures were made some time ago, or are of poor photographic quality, they will not be acceptable to the Government. Locale and subject-matter, not photographic quality, are the vital factors.

If you want to cooperate in this with your Government, fill out the form on the opposite page, or describe your pictures more fully in a letter, and mail it to the Editor of THE AMERICAN CINEMATOGRAPHER, 1782 N. Orange Drive, Hollywood, Calif.

**D**URING the past three months editorials in the "Among the Movie Clubs" department of THE AMERICAN CINEMATOGRAPHER have presented the idea (originated by George Burnwood of Philadelphia's progressive 8-16 Movie Club) of a National Association of Movie Clubs. Among the advantages for such a federation of clubs would be the immediate formation of a national amateur film-exchange through which both club-made productions and the films of individual members could be circulated among the member-clubs; na-

tional and regional competitions for both clubs and individual films; interchange of stock-shots between clubs or individuals in different parts of the country; and the pooling of equipment and talent when necessary for the making and showing of Civil Defense films. We're ready and willing to put the full force of THE AMERICAN CINEMATOGRAPHER behind such a project; all we ask is that the clubs concerned and their officers show us that they really want to see the plan in operation, and are willing to cooperate too.

That cooperation is already making itself felt! Officials of the clubs from coast to coast have written in to tell us they approve the idea, and will help get it rolling. Some have even started meetings among the clubs in their vicinity to start the ball rolling with local contests and plans for regional federation. Others have offered films, and advanced suggestions from their practical experience in inter-club program exchanges.

Quite properly, Philadelphia's 8-16 Club leads the parade. Club Secretary Harry Brautigam writes us to say, "The officers and members of the 8-16 Movie Club of Philadelphia wish to thank you for your kindness in mentioning in your magazine our Mr. Burnwood's idea for

the formation of a National Association of Movie Clubs.

"We feel sure that under the sponsorship of THE AMERICAN CINEMATOGRAPHER such an association could become a reality.

"As a start, we enclose a list of films we have been exchanging with other clubs, and for the benefit of those we have not contacted, we offer this list of pictures and invite correspondence from Club Secretaries.

"In order to start the ball rolling regarding the National Association, we are contacting the clubs in the near vicinity of Philadelphia, asking them if they would be interested in joining in an inter-club film contest. We contemplate holding a meeting of representatives of the various clubs to arrange for the contest, and would then have an opportunity of discussing the National Association. In this way it is possible we may be able to form the nucleus of such an association. If other clubs throughout the country were to do likewise, it should go a long way in getting the idea under way."

Frank Heining, also of the 8-16 Club, adds to the discussion and volunteers some very useful service. He writes "In our magazine, 'Closeups,' we have persistently stressed the benefits possible through greater inter-club cooperation . . . For several years we've effected inter-club exchanges on an informal basis. By 'informal' I mean that the knowledge of new club members has been gained mostly by chance. When we learn of the existence of a new club production, our 'exchange man' contacts the club and offers our own pictures as an inducement. Let me say, incidentally, that these valuable original prints are handled carefully. Ours show no defects after two years 'on the road.'

"Your magazine can do a real service for movie clubs by reviewing these productions and reporting, in a single, short paragraph, their running-time and general content.

"In conjunction with the above-mentioned reviews a central exchange could route the films to the associated clubs. This route could include all of the clubs in a definite order, or could be made up of clubs that indicate a desire to see a

Proposed form for available films for showing in various communities. Form to be filled out by member clubs, one form to each film, and to be returned to the key point for reference use.

NAME OF PRODUCTION: \_\_\_\_\_

SIZE: \_\_\_\_\_ mm. LENGTH: \_\_\_\_\_ ft. COLOR or B&W: \_\_\_\_\_

SILENT or SOUND: \_\_\_\_\_

If sound check type: \_\_\_\_\_

If sound on disk, check synchronizing look-up and speed: \_\_\_\_\_ (mechanical) (stroboscope) (75 or 33 RPM)

FILM TREATMENT: \_\_\_\_\_

1- Travelogue: \_\_\_\_\_ - Locale: \_\_\_\_\_

2- Documentary: \_\_\_\_\_ - Type: \_\_\_\_\_

3- Scenario: \_\_\_\_\_ - Type: \_\_\_\_\_

4- Other: \_\_\_\_\_ - Type: \_\_\_\_\_

5- Newsreel: \_\_\_\_\_ - Events: \_\_\_\_\_

AUDIENCE APPEAL: \_\_\_\_\_

Adults: \_\_\_\_\_ Special groups: \_\_\_\_\_

Children: \_\_\_\_\_

Men: \_\_\_\_\_

Women: \_\_\_\_\_

Mixed: \_\_\_\_\_

PRODUCER: \_\_\_\_\_

ADDRESS: \_\_\_\_\_ (number) (street) (city) (state)

AMATEUR MOVIE CLUB AFFILIATION: \_\_\_\_\_

AMATEUR MOVIE CLUB ADDRESS: \_\_\_\_\_

Proposed form for request of film for showing by member club. Each club to make out form requesting film for showing at later date, said form to be sent in to key point which in turn will inform requesting club's secretary of member club possessing film wanted, along with information pertaining to film.

REQUEST FOR FILM FOR SHOWING BEFORE \_\_\_\_\_

ADDRESS: \_\_\_\_\_ (number) (street) (city) (state)

FILM TREATMENT DESIRED: (Check one or more)

1- Travelogue: \_\_\_\_\_ - Locale desired: \_\_\_\_\_

2- Documentary: \_\_\_\_\_ - Story desired: \_\_\_\_\_

3- Scenario: \_\_\_\_\_ - Type desired: \_\_\_\_\_

4- Other: \_\_\_\_\_ - Type desired: \_\_\_\_\_

5- Newsreel: \_\_\_\_\_ - Events covered: \_\_\_\_\_

SIZE: \_\_\_\_\_ mm. LENGTH: \_\_\_\_\_ ft. SILENT or SOUND: \_\_\_\_\_

If SOUND, check facilities - Sound track: \_\_\_\_\_

Sound on disk: \_\_\_\_\_ (stroboscope) (mechanical) (75 or 33 RPM)

AUDIENCE APPEAL DESIRED: (check one)

Adults: \_\_\_\_\_ Special films for special groups: \_\_\_\_\_

Children: \_\_\_\_\_ Type film desired: \_\_\_\_\_

Men: \_\_\_\_\_

Women: \_\_\_\_\_

Mixed: \_\_\_\_\_

NAME OF FILM: (if known) \_\_\_\_\_



particular film reviewed in your magazine.

"While such an exchange should be centrally located, I'll offer to run it if no one in the Central States can undertake the job. The films themselves would not be handled by the exchange, and little expense would be incurred since most of the mail would be incoming. Route schedules can be posted along with 'Closeups' each month, and also sent along with the film cans."

THE AMERICAN CINEMATOGRAPHER will certainly be glad to follow Mr. Heininger's suggestion and review films available for inter-club exchange, if their makers will send them to us. And we certainly thank him for volunteering as he has to help get things started. His address, to those not on "Closeups" 60-club mailing-list, is 2030 West Tioga Street, Philadelphia.

President Lisle Conway, of the Syracuse Movie Makers Association also offers some highly practical suggestions, and volunteers active help. He says, "We would like to volunteer our services in starting and promoting the idea—although to be frank we have no information or material upon which to start. However, here are a few ideas of my own which might help to form a basis upon which such an organization could be founded.

"All amateur movie clubs interested in such an organization could contact a key point (which could be selected by them—another conveniently-located club, or possibly your magazine) and give this key point such information as films which might be used for exchange purposes; films which they would like to see; 'stock shots' they have or could make might be given or sold; and 'stock shots' needed by members; questions concerning various phases of amateur motion picture photography which some other club might have already worked out (such as the accurate synchronization of sound to amateur movies by means of stroboscopically synchronized discs, etc.) This key point would then serve as a clearing-house and storage point for the elements of these offerings, and would refer one club to any other that might be able to offer the required assistance or exchange.

"By this means, a catalogue of exchange ideas and exchange films of the entire country could be set up, and when cross-indexed would furnish amateur movie clubs throughout the country a

## FOREIGN FILM INDEX

Name: \_\_\_\_\_ (Please Print)

City: \_\_\_\_\_ State: \_\_\_\_\_

Street Address: \_\_\_\_\_

I have the motion pictures or still photographs listed below. I am willing to send them for examination to any designated official of the United States Government, with the Government's assurance that they will be returned to me at its expense, and intact.

I agree to give permission, if requested, to the United States Government to make such duplicates as it may desire of any or all footage of motion picture films so submitted, or any or all of such still photographs, with the assurance that such duplicates will be used by the Government only.

I am a citizen of \_\_\_\_\_

I have shown these films or photographs to the following Government agencies \_\_\_\_\_

Country	Date	Footage	Film-size	B & W or Color	Still Photographs

Date: \_\_\_\_\_ (Signature) \_\_\_\_\_

valuable service. Any club desiring certain information, or wanting a certain type of film to show at a meeting on some particular subject could contact the key point and they would then be referred to a club or clubs that would have authoritative information or the films on the subject wanted. From then on it would be up to the secretary of the first club to make the necessary arrangements with the secretary of the second club or group of clubs to effect the actual exchange of films or information.

"In addition, from time to time bulletins might be sent to the member clubs regarding timely topics, changes of importance that might affect them, requests for films of disasters or news events taking place in any one part of the country, and so on.

"Such an organization should operate on a non-profit basis, as practically all amateur organizations now operate. The only expense involved would be the postal and minor operating expenses, and when these would be split up with the various clubs participating the tax on each club would or should be negligible.

"No doubt there are many more suggestions which could be advanced by officers of other clubs to improve the idea and make it more workable. Also there are probably many more services that such an organization could render the movie-makers of the nation—services we would all like to hear and know about. The ideas

I have submitted are merely reflections of subjects we deal with in a small way in our Syracuse organization, and we hope that other clubs will come through with other ideas on the subject, so that something concrete may be started. In regard to any of the above ideas, if other clubs would like to have any of the information we've worked out, we would be only too glad to pass it on to them.

"In closing, we of the Syracuse Movie Makers would like to express our hope that all of the organizations in the country will do their bit toward helping along a worthy idea."

Program Chairman Tom Griberg of the Tri-City Cinema Club (Davenport, Rock Island and Moline), which has already participated in a number of inter-club program exchanges, comments, "I think the proposed federation of movie clubs would be of great value to the poor,

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Proposed form for "stock shots" or scenes requested by member club. Said form to be sent in to key point which in turn will relay necessary information back to requesting club concerning shot asked for.

REQUEST FOR SCENE BY: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_ (number) (street) (city) (state)

SIZE: \_\_\_\_\_ mm. LENGTH NEEDED: \_\_\_\_\_ ft. \_\_\_\_\_ in.  
B&W OR COLOR: \_\_\_\_\_ FILTERED: (type) \_\_\_\_\_ (red, yellow, green, factor, etc.)

SCENE NEEDED: \_\_\_\_\_

Please give angle and whether close, medium, or long shot.

PRICE WILLING TO BE PAID FOR SCENE: \$ \_\_\_\_\_

TYPE FILM DESIRED: (check) \_\_\_\_\_

Commercial \_\_\_\_\_ Amateur \_\_\_\_\_

Silent \_\_\_\_\_ of Sound perforated \_\_\_\_\_

Film stock: \_\_\_\_\_ (Eastman, Arfa, Gevaert, "pan", "ortho", positive, etc.)

Proposed form for use in listing "stock shots" or scenes for sale, trade, or give away. Member club will fill in and return to key point for reference use, information on such scenes.

NAME OF SHOT OR SCENE: \_\_\_\_\_

ANGLE TAKEN: \_\_\_\_\_

CLOSE, MEDIUM, OR LONG: \_\_\_\_\_

SIZE: \_\_\_\_\_ mm. LENGTH: \_\_\_\_\_ ft. \_\_\_\_\_ in. B&W OR COLOR: \_\_\_\_\_

FILTERS USED: \_\_\_\_\_ FACTOR: \_\_\_\_\_

EFFECT CREATED: \_\_\_\_\_

PRICE ASKED FOR ABOVE SCENE: \$ \_\_\_\_\_

TYPE AND MAKE OF FILM: \_\_\_\_\_

Commercial or amateur: \_\_\_\_\_

Type of film: \_\_\_\_\_ ("pan", "ortho", "super-pan", positive, etc.)

Make of film: \_\_\_\_\_ (Eastman, Arfa, Gevaert, etc.)

SILENT OR SOUND PERFORATED AND SPEED: \_\_\_\_\_

OWNER OF SHOT OR SCENE: \_\_\_\_\_

AMATEUR MOVIE CLUB AFFILIATION: \_\_\_\_\_

AMATEUR MOVIE CLUB ADDRESS: \_\_\_\_\_



# 16 MM BUSINESS MOVIES

## MORE THAN SHELTER

Documentary, 1200 feet black-and-white, sound.

Presented by San Francisco City and County Housing Authority.

Produced by William H. Abbenseth; direct-16mm. recording by W. A. Palmer & Co.

The term "documentary" is often used very loosely, and mis-used more often than not; but "More Than Shelter" is a genuine documentary—and an excellent one. It is a picture which forcefully brings home to the citizens of San Francisco the fact that while that region prides itself on being "the city without slums," it still harbors far too many buildings which though modern enough fifty or sixty years ago, are now so thoroughly deteriorated and over-crowded as to give a very accurate facsimile of slum conditions. And unlike so many documentaries, this picture does not stop by merely posing the question: it shows what is being done to correct this condition, and thus ends on an inspiring note of hopefulness for the future.

For what we understand to be his first attempt at a production of this magnitude, William Abbenseth has done a very fine job—one that shows very great promise for future achievement in the documentary field. Technical flaws there certainly are, but they are balanced by a strength and forcefulness in direction, and a sincere factualness in presentation, which make "More Than Shelter" a film well worth seeing.

From the technical viewpoint, the picture is a very commendable job of direct-16mm. all the way through. The picture was photographed on 16mm. reversal film, from which a dupe negative was made, with release-prints in turn made from this. There is, as might be expected, some loss in tonal values as compared to a reversal duplication job, but the overall quality of the laboratory work, done by Consolidated, is of the sort that is all too-seldom seen in black-and-white 16mm. There are some variations in exposure and contrast which might probably be more nearly equalized if the duplicate negative had been made to a lower gamma and a slightly lighter print made.

The picture has an unusually interesting musical score, written especially for the purpose by Foster Cope and performed by the 75-piece W.P.A. Symphony Orchestra under Nathan Abas. In general, this score is surprisingly good, especially when it is considered that neither composer nor performers were apparently familiar with picture scoring. In some sequences, however, it seemed to this reviewer that the music was a bit too modernistic and strident, and tended to distract attention from the visual phases of the picture. In some other sequences—notably the rainy-day sequence

in the slum, just preceding the tenement fire—the music should certainly have been better coordinated with the action. In this sequence the pictured action—the repetitious drip, drip of water through a roof and into pots and pans—gives a cue for musical rhythm which should by all means have been followed.

The recording is excellent. The score, we understand, was first recorded on acetate discs and then dubbed to film, while the narrative is direct-16mm. recording. We rather wonder why, in several scenes in which various of the slum-dwellers (both men and women) are shown asking why nothing is done about things, other voices than that of the narrator were not used. It would have strengthened the effect considerably.

## CHAMPIONS SIRE CHAMPIONS

News-documentary film on cattle-raising; 1200 feet Kodachrome, sound.

Presented by Roy J. Turner Hereford Ranch.

Produced by Ramsey Pictures.

In view of the fact that this picture was rather obviously made under catch-as-catch-can newsreel conditions, with no opportunity of staging action or planning continuity, it stands as a distinctly creditable attempt. The producers have managed to give the picture a surprising lot of pictorial and production value.

The picture as a whole gives a very excellent representation of a year's routine at this great ranch which specializes in the raising of prize-winning Hereford cattle. Particularly interesting highlights are the newsreel-type sequences showing the annual cattle-judging contests in which 4-H and Future Farmers' youngsters participate, and the annual auction of blooded stock. In view of the difficulties involved in filming such events, producer Ramsey has done more than ordinarily well with this.

The color-rendition is excellent—a particularly important point in a film like this, where a slight difference in coloring (unnoticeable to the layman) can make a difference between a champion and a near-champion. Ramsey has also brought in a number of pictorial shots of the ranch which are enough to make most of us totally revise our preconceived opinions of Oklahoma as a "dust-bowl" region.

We still find ourselves in some slight disagreement with Ramsey as to the ideal technique for exposing Kodachrome, and as to the merits of 35mm.-reduction vs. direct-16mm. for sound, but none the less, the picture is an excellent one technically. We hope, however, that some day the sponsor may have a chance to see "The Story of Linnetta," a very similar picture made in California some years ago, and realize the possibilities in dramatizing the career of a cow from calfhood to a Grand Championship.

## MINNESOTA DOCUMENT

Documentary, 35mm., synchronized sound. Produced by the University of Minnesota.

Although the title of this picture lacks the glamor which its actual subject-matter might give it, "Minnesota Document" unfolds in monochrome a story of the growth and development of the State of Minnesota in a way that will be new and impressive to even the most sophisticated.

Robert Kissack, Jr., head of the Visual Education Department of the University of Minnesota, directed the making of this 35mm. sound-film (produced under a grant from the Rockefeller Foundation), marshalled the historical facts about the state, and directed more than 750 non-professional actors in a film which portrays the growth of Minnesota in terms of human sacrifice, perseverance, and frequently avarice and greed.

His direction is good, especially when it is considered that none of the players were trained in acting before camera and microphone. This difficulty is especially apparent in the sound-recording, as some of the voices were rather low, while other speakers dragged their lines slightly. Re-recording would probably do a great deal to help this phase of the picture.

However, the producers of "Minnesota Document" have relegated the inevitable production limitations to a place in the background by excellent cutting of the film, and by the introduction of a specially-written musical score which sweeps the picture along with a really professional flourish.

Stark realism is the keynote of the camerawork, done somewhat in the manner of "Citizen Kane." The production-crew travelled to all parts of Minnesota to record the scenic, industrial and agricultural sequence, and received notable cooperation from business and civic leaders for the special settings required.

Paul Wendt was Chief Cinematographer, and Everett Miller recorded the sound, much of which was lip-synchronized. The musical score was composed by John Verrall of Hamline University, and the symphony orchestra was conducted by John Kuypers, of the same university. The film was produced at the University of Minnesota as a part of the work of a four-year experiment in educational film production under a grant from the General Education Board of the Rockefeller Foundation.

K. O. H.



# AMONG THE MOVIE CLUBS

## Syracuse Keeps Busy

Projectors of the Syracuse (N. Y.) Movie Makers Association have been running pretty close to full time every evening with shows for civic organizations, Defense Film Shows, church, supper and U.S.O. showings, etc. The members get a great kick out of it, the Club gets a very good form of acceptable publicity, and (we hope) the hobby of amateur movie-making is furthered in this locality. It might be added that showings of this type to the open public have greatly stimulated the efforts of our members toward the improvement of their camera, titling, continuity and projection work.

LISLE CONWAY, President.

## Tri-City's "Nite Life"

The April meeting of the Tri-City Cinema Club (Davenport, Rock Island and Moline) was highlighted by the screening of an unusually varied selection of films. First was the film of the Club's Annual Dinner, as filmed by Vice-Pres. John Hoffman. Program Chairman Tom Griberg presented "Ginger at the Brookfield Zoo," (100 feet, 8mm. black-and-white.) Dr. J. P. Johnston showed his 800-foot 16mm. color-film, "Northern Vacation." Highlights of the evening were two very unusual films from the library of THE AMERICAN CINEMATOGRAPHER: "Jello Again," (200 feet 16mm. color) made with animated Jello boxes by Carl Anderson, and "Nite Life," (800 feet color, 16mm.) an unusual example of trick camerawork by J. Kinney Moore.

GEORGIA T. FIRST,  
Secretary-Treasurer.

## Sound in Philadelphia

An exceptionally good 16mm. Kodachrome sound-film opened the April meeting of the Philadelphia Cinema Club. The excellent coloring and unusual camera-angles of this fast-moving story of phosphorus held the interest of the club to the last shot.

The "eights" scored again in a quiz program contest conducted by our new program director, James Maucher. "Skating Vanities," a difficult subject to photograph, was well handled by our new Secretary, Robert Henderson. A film taken at the first Club picnic in 1936 was shown and turned out to be highly amusing to all. We have certainly progressed in our movie-making in those six years!

FRANCIS M. HIRST,  
Publicity Officer.

## Oakland Tries New Paths

With the curtailment of picture-making possibilities in the Oakland area due to military restrictions, the Oakland Motion Picture Club has turned toward other fields to "keep 'em rolling." Member Byron Willifred is getting his camera ready to shoot a film on the indus-



Long Beach Cinema Club previews "Fire From the Skies" to Defense Officials. Back row: Director Ray Fosholdt; Maj. Theodore Enter, Chemical Warfare Service, U.S.A.; Lt. Babcock, Chemical Warfare Service; Walter Evans, Los Angeles County Defense Council Film Committee; Dave Olmstead, Long Beach publicist; Chief Allen C. DuRee, Long Beach Fire Dept.; Claude Evans, Chief Long Beach Fire Prevention Bureau; M. Kielson, Mgr. United Artists Theatre, Long Beach; H. McConnell, Long Beach Press-Telegram; Charles Vickers, Coordinator Civilian Control Center; Capt. M. M. Clements, Long Beach Fire Dept. Front row: Cameraman Val Pope; Narrator Hazen White; Scenarist LaNelle Fosholdt; Mrs. Dave Olmstead; Capt. J. H. Wheeler, Training Div., Los Angeles Fire Dept.; Mrs. A. C. DuRee; Mrs. J. H. Wheeler; Mrs. Mildred J. Caldwell, the Club's Defense Film Coordinator; Saul Elkins, 16mm. Film Coordinator, Los Angeles County Defense Council; Councilman W. J. Brunton, Long Beach; J. A. Mulvey, Chairman Civilian Defense Control Center. The verdict: Long Beach's amateurs have turned out one of the best, if not the best incendiary bomb pictures made!

trial preparations made in a War-Industry plant which he is connected. Fellow club-members have agreed to help him on both script and camerawork.

President Chet Barnett has recently joined the ranks of the home-recording enthusiasts, with a dual-speed recording unit with which he plans to record music and commentary for his films.

Past-President Clyde Diddle has prepared a script on a subject which will be made in table-top fashion, to be shot at the next few gatherings as a part of the Club's meetings.

E. EUGENE LEONHART,  
Director of Publicity.

## Metropolitan's Pan-American

North American extremes marked the program for the April meeting of New York's Metropolitan Motion Picture Club. First there was "Canada Calls You to Manitoba," two reels of 16mm. Kodachrome produced last summer by member Frank Gunnell with the cooperation of the Department of Natural Resources of the Manitoba Provincial Government. Next, jumping thousands of miles to the south, the members saw "Guatemala—Land of the Mayas," a 400-foot Kodachrome (16mm.) filmed in 1940 by member Ella Paul. Both films were accompanied by sound-recordings via the Club's dual turntables.

An April 10th, a delegation from the Club attended the Annual Show of the Brooklyn Amateur Cine Club, and several members showed-films, by invitation. The M. M. P. C.'s own big show—the Annual "Gala Night"—was scheduled for the

night of April 24th, at the Master Institute Theatre. Outstanding films, by Club-members and others, were shown.

FRANK E. GUNNELL.

## Sound for Long Beach

Sound-on-film was the keynote of the April 15th meeting of the Long Beach Cinema Club. William Stull, A.S.C., Editor of THE AMERICAN CINEMATOGRAPHER, gave an interesting talk on the principles of 16mm. sound-on-film recording, and exhibited a 200-foot Kodachrome test reel made specially for the occasion with the new Auricon 16mm. sound-camera, with members of the Club's Defense Film Project as actors. He also showed 16mm. sound-films made by Mark C. Honeywell, in Florida, and an outstanding Kodachrome sound-film, "Over Pine Mountain Trails," an impressive record of on-the-spot activity in the lumber industry.

PRUDENCE BRAKLOW,  
Secretary.

## Washington S.A.C. Hears G-Man

Special Agent Milton Jones of the F.B.I. was special speaker at the April 20th meeting of the Washington Society of Amateur Cinematographers. He spoke on "Use of Photography in Connection with Laboratory Work Incident to National Defense." Supplementing his talk, the March of Time 16mm. sound-film "Men of the F.B.I., 1941," was also shown. "Skyline Drive and Luray Caverns," a Kodachrome sound-film, as also a program feature. The Club plans to

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# THE BULLETIN BOARD

## Two New DeVry Projectors

Of particularly timely interest in view of today's greatly expanded use of sound-films for wartime employee and Civil Defense training is the recent announcement by President W. C. DeVry of the DeVry Corporation that his firm has developed two new portable sound projectors, available, it is stated, for undelayed delivery. The two new machines are the "Victory" model (16mm) and the "Liberty" model (35mm.) It is stated that both models conserve vital war materials without sacrificing, and in some instances even improving the quality, durability, dependability and performance of pre-war DeVry models, and with no appreciable difference in weight. More complete details of the new machines may be obtained from the DeVry Corp., 1111 Armitage Ave., Chicago, Ills.

## Film on Japs Ready

"Know Your Enemy—Japan!" the first of a series of films dealing with the allies and enemies of the United States, is scheduled for release May 15th by the Princeton Film Center, Princeton, N. J. It will be distributed nationally in both 35mm. and 16mm. form to theatres, Civilian Defense Councils, schools, industrial organizations and local governments. The film, produced by the Princeton Film Center in co-operation with the Institute of Pacific Relations, well-known authorities on Japan and the Orient, is a 1-reel sound-film and answers such questions as "How large is the Japanese Empire?" "What is Japan's military and naval strength?" "Is Japan self-sufficient in raw materials?" "Can Japan win the war?" This and others in the series will be available for either rental or purchase. Inquiries should be addressed to the Princeton Film Center, 410 Nassau Street, Princeton, N. J.

## 3,000 See British Documentaries

Crofters in the windswept islands of the Hebrides and market gardeners in the flower land of the Scillies were among the 3,000,000 people in the British Isles who last year saw films shown by flying squads of mobile film units.

Sponsored by the British Ministry of Information, these 70 units, which will soon be 100, are known up and down the British Isles as the "Celluloid Circus." They travel thousands of miles through rural and urban Britain, making stands for the night and moving on next day.

Morning, noon or night, there is always an audience waiting for them. First come the school children to special films about the Empire and its Allies.

In the afternoon, films about food and wartime housewifery are shown to Women's Institutes in the countryside and to townswomen's guilds in the towns. In the evening there may be a set-up for agricultural workers in a farm, and the day is rounded off with a "midnight matinee" between shifts at an armament factory.

These free shows, which usually last about 80 minutes, let people see how their own activities fit into the general picture of the nation at war. The new orator-film, moreover, has brought the public forum into the village and leads lively discussions of the country's problems.

Apart from these mobile units, M.O.I. and other films are available from the Central Film Library free of charge to any organization which has facilities for showing them. Between 5,000 and 6,000 films are sent out each month.



## New Magnetic Recorder

Immediate playback is possible with a new magnetized-tape recorder—trade-named "Mirrophone"—just announced by Western Electric. Consisting of a compact amplifier-and-speaker cabinet and a microphone, as the illustration shows, the Mirrophone contains a continuous loop of metal tape, sufficient for a minute's recording. Sound is recorded on this tape magnetically, and reproduced the same way; as each new recording is made, the previous one is automatically erased as the tape is demagnetized.

Intended principally to provide a quick-playback method of rehearsing radio "commercials," voice- and speech-improvement, and the like, the Mirrophone should prove useful as well as a means of rehearsing narrators, and the like, in difficult parts of film-recording assignments.

## Agfa-Ansco Centennial Booklet

Commemorating the firm's 100th Anniversary, the Agfa-Ansco Corporation has prepared for free distribution a generously-illustrated booklet which graphically presents the story of the origin and development of America's oldest photographic manufacturer. Pre-

pared in chronological form, the booklet links the firm's progress with the advancement of photography in the United States during the past century. The significance of each date mentioned is discussed concisely, while numerous illustrations supplement the text in effectively pictorial form. Complimentary copies may be obtained by addressing the firm's Service Department, Binghamton, N. Y.

## New Texas Film Library

National-Ideal Pictures, Inc., opening a new office in Dallas, Texas, is a combination of two previously well-known substandard distribution organizations, the well-known 16mm. Ideal Pictures Corp. (Bertram Willoughby) and the National 16mm. Film Libraries Co., of Texas. The combined set-up is stated to be the largest substandard film-library in the world, serving schools, clubs, churches and homes with both features and short-subjects—16mm. sound and silent, and 8mm. silent.

PHOTOGRAPHY: ITS SCIENCE AND PRACTICE, by John R. Roebuck and Henry C. Stachle. (D. Appleton-Century, \$5.00.)

Good volumes have been written before this, expounding different aspects of the photographic science, but rare are the volumes that patiently lead the investigator through a continuity of the science as this volume does. It not only lays bare the theory upon which the science is based, but banishes from the mind the mysteries so many of the good volumes have failed to clear.

Enough historical data, from the inceptive discovery of photography to the present time, acquaints the student with the beginning and growth of the science without impeding his desire to delve into facts of deeper and recent discoveries.

The subject of emulsions is treated exhaustively, through all the stages of evolution, from the preparation of the gelatin; the light-sensitive content for the gelatin; microscopic grain study, and frequency curves of final sensitivity of the completed emulsion.

The chemistry of modern photo-science is interestingly discussed in the light of recent discoveries. The factual theory of the latent image is clearly set forth, dispelling at once the random guesses regarding its influence upon the ultimate result of the finished product.

Most interesting, and complete to the last minute of obtainable data, is the discussion on color photography and the physiological principle of its three-color vision: the reproduction of the colors of the visible spectrum by mixing in various degrees, light of the three primary colors, red, green and blue. The necessity of color separation is stressed, whether the separation be accomplished with single negatives, or whether the



proper ingredients for separation are incorporated by layers of separated color emulsion-dyes on a single base. A color chart included in this section gives the most completely graphic visualization we've yet seen of the usually perplexing questions of "additive" and "subtractive" color-printing.

The "one-shot" process of securing three separate negatives in one operation is interestingly discussed and graphically illustrated, together with discussions of the merits of the important color processes that have influenced the progress of perfected color-photography as we know it today.

The "subtractive" process, due to its commercial importance, is carefully discussed, as well as "wash-off relief," so closely associated in popular color technique, attracts absorbing interest, as does also the discussion of the Kodachrome process.

An interesting chapter, the "Laboratory Manual," is devoted to the technique required for the good quality that should stand out in every endeavor of serious photography. It contains all that can be desired by the earnest student inclined to follow patiently the experiments as set forth, pointing up the exact technique of photographic processing, from the installation of the individual darkroom, through to the completion of infrared and ultra-violet photography. A.W.

## Movie Clubs

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hold a 16mm. contest at its first May meeting, and an 8mm. contest the second May meeting.

JOHN T. CHEDESTER, President.

### "March of the Movies" for L. A. Cinema

High spot of the April meeting of the Los Angeles Cinema Club was a showing of a 16mm. print of Commodore J. Stuart Blackton's "March of the Movies," showing scenes and personalities of the very first movies up to date. Very timely also were 16mm. sound films of "Fighting the Fire-bomb," and an official British Government film on the London raids. Harry Parker showed a selection of Kodachrome slides, and Dr. F. F. Guerrieri a reel of excellent 8mm.

At this meeting Walter Evans, of the Los Angeles Civilian Defense Council, called for volunteers to aid in showing Defense Films. Since then Members Kenneth Forbes, Guy Haselton, William Hight, David Paige, Harry Parker, Ed Pyle and Mark Russek have been spending their spare time showing Defense Films to various meetings.

A. A. ANDERSON, President.

### 8-16's Sponsor A.R.P. Show

Recognizing the importance of Civilian Defense at this time, the 8-16 Movie Club of Philadelphia sponsored the showing of the official London Air Raid pictures and other Civilian Defense films

at its April meeting, with all Air Raid Wardens as special guests, and the general public also invited. The Club is also initiating a movement to organize the Movie Clubs in the Eastern United States as a part of the Association of Amateur Movie Clubs sponsored by THE AMERICAN CINEMATOGRAPHER magazine. Plans are afoot to hold an inter-club contest between these eastern clubs as an initial activity of the new group.

FRANCIS HEININGER.

### Title Demonstration in Utah

At the April meeting of the Utah Amateur Movie Club Wendell Taylor of the Technical Committee brought his titler and shot some titles at the meeting to demonstrate the procedure of titling. The processed film will be shown at the next meeting. President Ted Geurts showed the first roll of black-and-white film which he shot, and he commented that when he began he made just as many mistakes as other beginners but by perseverance he has learned to take pictures which give him a great deal of satisfaction. L. Clyde Andersons "October By-Ways," which won the Color Award in the 1937 American Cinematographer Annual Contest, was again shown to the membership and delighted them with the fine October pictures.

To encourage the editing and titling of the odd and random shots a "Pot Shot Contest" was announced for the June meeting. We expect some ingenious entries in this contest.

JOHN HUEFNER, Secretary.

### San Francisco on Skis

The Cinema Club of San Francisco held its regular monthly meeting April 21st in the club's quarters at the Women's City Club. As is our custom, many of the members and guests dined together just prior to the meeting using the facilities of the City Club. An honored guest was Walter Lenz, Photographic Editor of the San Francisco Examiner.

A talk on the correct use of the Weston Electric Meter by Herman E. Held of the Weston Electric Instrument Company was given. With the aid of illustrated slides, Mr. Held clearly indicated the proper use of the meter to obtain best results.

"San Francisco—A Story-book City," a 16mm. Kodachrome film by Clubmember Russel Hanlon was the first film shown. As is usual with Russ, nice exposure, superb composition, a steady tripod and judicious use of long and short focal-length lenses insured a swell job of filming.

An unannounced feature was the screening of the 16mm. Sound-on-film Kodachrome picture, "The Ski Chase." This film, obtained through the courtesy of the Union Pacific Railroad, depicted one of the many winter sports activities of famed Sun Valley Resort.

"Building a Bomber" and "Tanks," two timely 16mm. black-and-white films with

S.O.F., produced by the Government's Office of Emergency Management and photographed by Carl Pryer, A.S.C., wound up the evening's entertainment.

L. J. DUGGAN, Secretary.

## Club Federation

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suffering program committees of the clubs involved. I like the idea."

President Elmer Culbertson, of the Indianapolis Amateur Movie Club, President Robin Hadley, of the Long Beach (Cal.) Cinema Club, and President John Walter of the Los Angeles 8mm. Club are others who have assured support of the plan. The latter two clubs, incidentally, are already cooperating in providing an exchange program for forthcoming meetings of the Indianapolis and Tri-City clubs.

Clearly, the project is moving. If the officials of other clubs will cooperate with enthusiasm equal to that shown by these pioneers in the movement, America's Association of Amateur Movie Clubs can and will become a reality. Getting things established will call for work, films and enthusiasm—all of which America's amateur clubs have in abundance.

For our part, THE AMERICAN CINEMATOGRAPHER will cooperate to the full—and with no strings attached. We will gladly review and list any films available for inter-club exchange. To that list we add our own library of duplicates of the outstanding films which have won world-wide honors in this magazine's International Amateur Movie Contests. As the cooperation and demands warrant, this list, in printed or mimeographed form, can be made available to all participating clubs. Until such time as it may be wise to establish a separate bulletin for this association, we offer the pages of THE AMERICAN CINEMATOGRAPHER to carry news, film listings and technical information for the association. And if enough clubs feel such a step would be helpful, we will undertake to prepare complete programs comprising both film and a prepared lecture discussing the films in detail, for use by participating clubs.

The future of the project, however, rests with the leaders of America's Amateur Movie Clubs. It seems to be a workable plan, and one that can be of lasting benefit to the clubs participating. We're ready to put our shoulders to the wheel. So, too, are the officers of the various clubs who already support the plan. It's too big an idea, though, for any one individual or group to dominate it. We need the cooperation of you and your club. HOW ABOUT IT? END.

### "Sixth Sense"

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brought a natural ending to a film that had been unplanned only a few hours before. The scenes blended harmoniously, needing but a minimum of editing plus a few explanatory titles.



The exposure angle has not been stressed as it is taken for granted any reader of *THE AMERICAN CINEMATOGRAPHER* is familiar enough with his camera and exposure-meter, if he has one, to make all these basic adjustments quickly and accurately. Making the most of conditions and filming as much in the proper sequence as possible will save a lot of time and bother. You will find, as I did, it is not necessary to know far in advance what you intend to shoot in order to make a good movie. END.

## Film Your "Victory Garden"

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runs out of food is as good as licked.

Our country is not going to run out of food, nor will we allow hunger to knock out any of the nations united with us in our world-wide struggle. Bread and meat, and milk are assured in reasonable abundance, but there are other items, chiefly the bulky, leafy vegetable, essential to a healthful diet, that may become harder to get, whether fresh or canned. England is not starving, yet fresh vegetables are said to command fantastic prices, compared to those we pay here. It is not that these essential vitamin-rich vegetables are hard or expensive to raise—they just take a lot of labor time, and their bulk and perishable nature puts an extra load on transportation facilities already taxed to the limit by urgent, direct war needs.

In this country we know that we can have our vegetables and other fresh green foods without ever being asked to pay five dollars for a single cucumber. For in the backyard kitchen garden we have found a way to whip the twin bugabood of man-power and transport-space shortages. Within ten paces from its kitchen door, the average family can raise almost all the green food it needs throughout the summer, and some for home canning as well. All that is needed is a plot of fertile, well-drained land, perhaps 20x50 feet in size, a few tools, some seed, and the healthful spare-time work of taking care of the growing plants. Such a plot is very properly called a "Victory Garden," for it adds to the Nation's food supply, provides healthful, fresh-air activity for indoor workers, and releases farm and industrial manpower (not to mention transport space) for war needs.

And since, as a reader of *THE AMERICAN CINEMATOGRAPHER*, you're inevitably a movie-maker (even if not a garden addict!), you can give your Victory Garden project an excellent sugar-coating by making it the subject of some or all of that spring and summer filming (preferably in Kodachrome) that you mightn't do otherwise if you're conserving tires like the rest of us, or if you happen to live in a coastal "Combat Area" where so many of your pet peacetime filming subjects are now on the restricted list. Your own back yard (unless it actually overlooks defense works!)

is still open for unrestricted filming!

My suggestion would be to begin by seeing Burdett's film on the subject, entitled "Garden for Victory," it's available for either rental or sale through Bell & Howell's Filmsound Library in several versions, both color and black-and-whites, silent and sound, for both 16mm. and 8mm. projectors. See for yourself what he's done with Filmo and Kodachrome, with a few feet of ground and some growing vegetables for subjects. Then see if you can't "top" his efforts for yourself! Whether your film does or not is up to your own filming abilities. But the vegetables you grow will be just as good eating—and fully as much contribution to the War Effort! And you'll benefit personally by gaining a lot of healthful, fresh-air exercise, and adding to your library a film that's probably a bit different from the usual run of travel and family pictures you've always made before. END.

## Maurine

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is pleasing to the eye. That is all one needs to know about the theory of composition.

"When I advise photographers to go to the movie houses and study the closeups on the screen I am serious. I have never stopped doing it. When I see something new and decidedly unusual and pleasing I go back to my studio and, with my sister Marjorie as my model, I start experimenting with my lighting arrangements until I suddenly see on the ground-glass of the camera the same effect I saw on the screen. I make a note of the lighting details, and when a subject comes along who looks like the type of the star so lighted, why I just light her that way, and everybody is happy.

"Don't try experimenting on your customers, though! Be sure you work out the lighting on a model. You should be such a master of your lighting that you do not tire your customer out while you experiment with setting your lights.

"Now, get me right on this one point. I do not advise that all a photographer do is copy the motion picture cameramen's work. You can do that until you finally begin to get the feel of a new style in portraiture. Then you'll find yourself doing the way the ace cinematographers do—studying each subject individually, and lighting him to suit those individual requirements. But until you get that screen-closeup technique thoroughly implanted in your mind, you'd better be a copier, or else you'll just keep on turning out the same, static type of pictures so many other photographers do.

"The same plan works just as well with movies—amateur or professional, 16mm. or 8mm.—too. If anything, rather better, for you're working in the same medium as the cinematographer whose work you study in the theatre. The trouble with all too many movies—not only strictly amateur films, but pictures made

by 16mm. professionals, as well—is that the people who make them seem to forget that they're making movies. When they photograph people under artificial lighting, instead of using a true movie lighting, which would give an illusion of natural roundness and an impression of life and animation, they simply set up enough lights to get the necessary exposure-values, without much apparent thought of what else lighting can do. The result is generally an impression that you're looking at a mere reproduction of a person, rather than at a presentation of a personality.

"Another thing I can't stress too much is the use of make-up. I use it in all of my portraits—and as a result, scarcely any of my portrait negatives are ever retouched. All the retouching is done with make-up, before the picture is made. This of course is doubly important when you're really working with movies, rather than stills.

"My suggestion is that when you see a picture that's worth studying, see it at least twice. The first time through, no matter how interested you may be in the technique, you can't help being distracted by the story. But the second time you see it, you already know how the story comes out, so you can keep your mind completely on the technique, and really learn something."

That Maurine is apparently right in her ideas is pretty well proven by her own experience. Most people in the United States have seen photographs of Jane Russell, who had the starring role in Howard Hughes' still unreleased film, "The Outlaw." She's probably received more pictorial publicity than any other starlet whose first film has yet to reach the public. Well, it was because Howard Hughes saw one of Maurine's portraits of her that Jane Russell was picked for the role.

Then Hughes sent every person being considered for parts in his picture to Maurine to be photographed. He made his selections from those portraits. Furthermore, when he had his cast tentatively selected, he made motion picture tests of them with 16mm. camera and sound-equipment, as reported some months ago in *THE AMERICAN CINEMATOGRAPHER*. And he engaged Maurine to direct the photography of most of these tests, so that she could put on film the quality she brought out in her portraits.

## Testing Auricon Camera

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of the people present who had participated in the making of the Club's Defense Film an opportunity to appear and says a few words, we made long-shots as extreme as the combination of a 25mm. lens and 25 feet of floor-space would permit, three-shots, two-shots, medium-shots and both normal and extreme close-ups. We made them with absolutely no consideration of the factor of sound,



working with all of the freedom we would have expected shooting silent pictures with, say, a Cine-Special. Yet in every instance, the recording was satisfactory. The quality was good—by no means of Academy Award quality, perhaps, but fully intelligible in spite of the fact that with one exception our lens-fodder consisted of wholly untrained actors. In other words, good, commercial sound, actually a good deal better than some I've heard in commercial 16mm. pictures, and a very great deal better than most 16mm. reductions from a professionally-recorded 35mm. original.

Our method of working was to begin with a very rough outline of what we wanted to get over in any given scene—the people involved, and an idea, at least of the thoughts we wanted them to express. Then between us we worked up impromptu dialogue. There would follow one or two rehearsals, to get the actor accustomed to his lines, and to set the lighting, camera-manipulation and recording levels. Then we would shoot the scene—at a single take.

This method worked out very well. So well, in fact, that all of us would recommend it very strongly to any group not working from a very rigidly set dramatic scenario. For by it, we maintained a surprising degree of spontaneity and naturalness in spite of having no professional actors.

Exposures, incidentally, were metered with the writer's Norwood meter, which worked perfectly, since the Auricon camera, at the standard 24-frame sound speed, gives the 1/50th second exposure for which the Norwood is calibrated.

In one or two takes we experienced a slight hum in the sound equipment. This made itself easily evident through the monitoring head-set, and was traced to the lighting equipment. It was overcome by grounding the recording amplifier by reversing the polarity of the lamp which proved to be the noisy one, and by taking care that the cables powering the lamps did not lie across or otherwise in too-close proximity to the cables connecting the units of the recording system.

Another thing we learned was that some revision of directorial technique is advisable when you are using single-system recording. It fell to my lot to direct most of the scenes; being accustomed to 35mm. professional practice with double-system sound and professional cutters who can easily clip unwanted words and actions from the start and finish of sound and picture films, from force of habit I used the professional signals, saying "Camera," and "Action," as a signal for starting camera and action. But using a single-system set-up like this, with sound and picture permanently on the same film, 24 frames apart, it is a great deal better if you get in the habit of giving these signals in pantomime, rather than verbally. Then they don't have to be cut out of the film before you show the completed picture!

In the same way, we learn that it is necessary to allow plenty of time between throwing the starting-switch and commencing the action for the camera to get up to speed. Professionally, this is usually signalled by either a buzzer, or a verbal report from the sound-man that the equipment is up to speed. With the Auricon, it is a good idea to count slowly to yourself "one—two—three," to measure this interval. (A longer count won't hurt, nor will it waste enough film to worry about). The reason for this is that whenever the camera stops, since the recording light of the variable-area recorder remains constantly on, the film that is standing in the sound-aperture is fogged, sometimes (if the camera stops long enough) well into the picture. Also, the camera may possibly stop with the shutter open, in which case the picture-frame is fogged, and the fogging often seeps over into the sound-track, as well. This results in a white-flashed frame on the picture, and a disturbing "pop" in the sound, at the points fogged. They can be cut out, of course, but unless sufficient time is allowed between the start or finish of the action and the beginning or end of the scene, cutting out these fogged frames will result in cutting out a bit of the sound-track or a bit of the picture (according to whether the cut is at the beginning or the end of a scene) with not only a jump in action or sound, but also throwing picture and sound momentarily out of sync.

With these exceptions, however, making synchronized talking pictures with the Auricon proved every bit as easy and as convenient as making silent ones with any good 16mm. camera. The results on the sound side were uniformly excellent; as a matter of fact, we learned that making recordings on this equipment using Type A Kodachrome seems almost automatically to present the sound at its best. And finally, there was the incomparable thrill of not only seeing your pictures—in full color—move, but hearing them talk—and talk very intelligibly—as well. Either for use by 16mm. professionals or by advanced amateurs, we can report the new Auricon as a thoroughly practical method of making your own 16mm. sound films. **END.**

## 8mm Show

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a happy thought—line voltage drop! He rushed down to his office, picked up a voltmeter and a step-up transformer.

The trouble was uncovered by the voltmeter, which showed the line was only delivering 90 Volts. In consequence the efficiency of the projection was extremely low.

The step-up transformer was plugged into the line and the projectors were again hooked up, with the voltmeter in the circuit.

Results were astonishing as the line voltage was lifted by the transformer to 115 Volts, the rated light power. A fur-

ther step-up to 125 Volts increased light-intensity to a point where extremely brilliant pictures were produced.

All problems had been solved and when the doors of the theatre were opened the following evening a milestone in the engineering of 8 millimeter filming was passed.

From the opening fanfare to the final "The End" the show was handled with dispatch and precision. Excited guests found themselves viewing for the first time a brilliant and sharp 8 millimeter public showing of theatrical magnitude, and their response to the efforts of members to entertain them was full compensation for the many hours that the committees had given to this "showcasing of their hobby." **END.**

## Set-Building

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ing. Next time you go to a movie, notice how much the professional cinematographer gains from playing with contrasting highlights and shadows at points where the set-wall has a little projection, or is recessed. You can get this sort of design just as easily as we do by simply making up a few special flats, of normal height but only one or two feet wide. With these, you can provide interesting little projections or recesses in what would otherwise be flat, uninteresting walls. And your cinematographer will thank you for giving him a chance to get more of an illusion of relief into his set-lighting.

Another trick you can use, especially where you are shooting at the door of a room, with a hallway or corridor beyond, is to use a pair of simple flats for your set, with the door between, and then a third flat beyond the door to suggest the opposite wall of the hallway. If the scene is in a hotel or some similar semi-public building, you can get an interesting lighting by simply casting on this back-wall a shadow-pattern, say from a potted plant, or even a high-backed chair. And if your scene calls for a shot shooting from one room across a hall and through the door of another room, you can do this with but three sets of flats—one to represent the wall and door of the near room, the second, to represent the door of the room across the hall, and the third—somewhat wider, and perhaps with a window, to represent the far wall of the distant room. Unless your script calls for them, you won't need the side-walls of either of the rooms. And if you do, nine times out of ten a single "wild" wall will do the trick.

Where you need them, you can often get standardized pillars and columns from millwork firms and especially from house-wreckers. For that matter, if you plan your shots carefully, you'll find you don't need a full column, but only the half-surface that shows to the camera. You'd be surprised how much "production value" you can get out of a



single column placed a few feet in front of a simple flat. With a chair and perhaps a potted palm, and of course the right type of floor-surface, you can suggest a corner of a grand ballroom!

Flats don't necessarily need to be literally flat. If you really want to be fancy, you can build flats with any kind of curved section you wish. This calls for a curved frame, and steaming the plywood until it can be bent to fit the curve of the frame. It's decidedly a more complicated job of carpentry than the ordinary flat, but it can be done, even by non-professionals. We do it all the time, and of course these stock curved sections, come in very handy in remodelling old sets and pieces of sets to get something apparently new.

We keep standard sections of stairways—long and short, straight and curved—and work them with flats into sets, too, for scenes that call for such things. This, I realize, is something a bit beyond the average non-theatrical filming group, but once you get started, you can imagine how helpful it is to have a good "library" of such stock set-pieces. In practically every studio, we build things like this for the big "A" pictures and then remodel and reuse them time and again in the less-expensive program pictures. Whether or not you recognize them when you see them in the "B's" depends upon how much the art director had to spend for remodelling them for use in the lesser films, and on how clever he is. Nine times out of ten you'll not recognize them.

In some studios, instead of building flats from plywood, they use very similar frames covered with muslin, which is porous to sound. This is very nice in theory, but in practice, especially in the hands of the non-professional, it's not so practical: the fabric walls require an extra lot of reinforcement to avoid having the walls ripple every time a character closes a door. Anyway, if you're shooting in sound (as I know some amateur groups making Defense Films are) and you have trouble with reverberation from the plywood walls, you can usually cure it by seeing that no two walls are parallel, so that the sound waves can't bounce from one to the other. It takes only a little angling to do this—so little the camera will seldom, if ever, detect it.

But muslin has its uses. If you want a "Citizen Kane" effect with roofed-in sets, you can get it by using the same method "Citizen Kane's" art director did, and putting a muslin ceiling on your set. This, incidentally, permits a group that is shooting sound to place the microphone above the muslin ceiling and, lighting largely from the floor, to get almost entirely away from the problem of microphone-shadows.

In sets representing interiors, where you have windows, you run into the problem of suggesting (except in night-effects) something, at least, of what lies beyond the window. With 16mm. equip-

ment, you can't as a rule use the expedients used by the professional—huge painted or photographic "backings," projection process-shots, and the like. But by means of a few potted plants or tree-branches, and a flat painted to represent blue sky, with perhaps a bit of foreground, if needed, made from a roll of that green grass-rug stuff sporting-goods stores use in golfing window-displays (we use it, too) you can get a surprisingly acceptable effect.

If you build your set outdoors, and have a real view beyond the window, you run into a variety of photographic problems. If you rely on daylight to illuminate your set, you get a very unnatural lighting effect. If you cover the set in so that you can use artificial lighting, you run into photographic problems in exposure and color balancing. But these can be circumvented.

If you're shooting in black-and-white, you can usually balance up the exposure-values of your interior and the exterior as seen through the window by covering the window-pane with fairly deep yellow cellophane—about the color of a K-3 filter, and using enough layers of cellophane to build up the desired density to balance the exposure.

If you're shooting in Kodachrome, you will most likely be using "Type A" for your Photoflood-lit interior. With this film, the area seen through the window, and illuminated by daylight, will naturally photograph a decidedly bluish shade. You can get around this by either of two methods. For one, you can use regular "daylight" Kodachrome instead of Type A, and instead of the regular Photofloods, use the special blue-bulb Photofloods. This will balance your color-values fairly well. If you don't want to do this, try covering your windows with pinkish cellophane—as nearly as possible like the color of the "daylight" filter made for shooting Type A outdoors. Using Type A, which is suited to your Photoflood lighting on the set, this cellophane filtering in the windows will, with a bit of experimenting, balance up the color-values of the daylight portions of your shot so that you'll get at least an acceptable color-balance between the two parts of the scene.

Finally, remember that the greatest secret in professional set-building (and even more so in amateur use, where you've got to stretch a slim budget) is to make the fullest possible use of the camera's tremendous powers of suggestion. What you actually build doesn't matter nearly so much as what you make the camera see. After all, your actual set need extend only a few inches beyond the side-lines of your widest-angled long-shot (just enough to give a safe margin for finder parallax, etc.) to get over the impression you want. Any additional construction is virtually wasted, since it doesn't show up on the screen.

Don't forget, either, that your camera is an impressionist. You can fool it into seeing things that don't really exist,

by means of cast shadow-patterns, full-size and even miniature front-pieces, and the like. The effect you get on the screen isn't determined by what your too-literal eye sees as you stand beside the camera (your eye has a far different angle from the lens, anyway) but by what the lens itself sees. If you make the lens see what you want it to, you'll get the right effect, regardless of whether or not it exists in reality.

So when you start the job of making a purposeful film, such as a Civil Defense instructional picture, begin your set-building in your script. Sketch out each scene and set-up—and then build in your actual sets only what is necessary to get those sketched onto the film. You'll find it will simplify your set-building problems more than anything else. And it will rob the problem of building sets of most of its terrors! END.

## Field Hints

(Continued from Page 199)

Many of our Military and Naval photographic units are likely to be working in the tropics—as in the South Seas, India, Burma, and eventually Java and similar places—and in such arctic and subarctic regions as Alaska, Iceland, and so on. Working in regions like these demands very special techniques to meet the unusual conditions encountered. You could write a whole book on tropical and arctic cinematography, but here are a few hints that will be helpful.

In the tropics, your twin enemies are heat and moisture. The heat softens your film, and the moisture makes it deteriorate. Keep your supply of fresh film always in its hermetically-sealed "tropical pack" cans until the last possible moment before shooting. Then take out only what you know you'll expose during the day's work. When transporting film in the tropics—either fresh supplies or film loaded for shooting—keep its containers out of the direct sunlight as much as possible.

If you're shooting a camera with outside magazines, like a Bell & Howell, Mitchell or Wall, make sun-covers which you can slip over the magazine to protect them. These covers are simply properly-shaped sacks made of heavy cloth. If conditions permit, light-colored cloth is better than dark fabric, as it reflects, rather than absorbs light. In regions where the heat is dry, rather than moist, you can use leather: but don't use leather for anything in a hot, moist climate such as you'll meet around Java or the South Seas, for the leather will sprout a growth of mildew overnight. (So will film!) For such conditions, camera-cases should never be leather, but either galvanized iron or some of the synthetic fabrics and plastics which are mildew-resisting.

Lighting and exposure are a big problem in tropical photography. The sun, generally speaking, is intensely bright, while the shadows are empty black. If you can, try and keep your action either



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*entirely* in the sun, or *entirely* in the shade, for you can't satisfactorily compromise between the two. You're bound to lose one or the other.

Reflectors—if conditions permit—help in closer shots. But you can't always carry reflectors when you're on field service. I found a very passable substitute, however, when I had to grab a scene in a hurry while making "Trader Horn" in the African bush. It's luckily a substitute that is handily available in most foreign parts, where gasoline usually comes in 5-gallon tins. I simply straightened out a couple of these tin cans, which made excellent "hard" reflectors. For "soft" reflectors, I appropriated the leading lady's bedsheets, which is a substitute you're not likely to find in an army in the field. Well, we used hers because she was the only one in the troupe who rated sheets!

Once you've exposed your film, dehydrate it and pack it as quickly as possible. You can dehydrate your film in a very simple desiccator consisting of an air-tight, light-tight can just big enough to hold a few rolls of film. At the lower end of the can, fix a false bottom of screening or perforated sheet-metal. Beneath this place a pan of calcium chloride. This chemical absorbs moisture from the air. Leave your film in the desiccator overnight or longer, and the calcium chloride will absorb the moisture in the air, and also the surplus moisture in the film. The chemical can be dried for re-use by simply placing it in a hot oven for a while.

Then pack your film and seal it. Be sure and pack it in cans and black paper both of which are really dry. You can desiccate your packing materials with calcium chloride, but a simpler way to do is to simply put cans and black paper into an oven until they're thoroughly dry. You can easily tell when the paper is dry: normally, paper in the tropics is as limp as a wet dishrag. But when thoroughly dry, the paper will crackle when you handle it.

Don't make the mistake of carefully sealing well-desiccated film in cans and paper that aren't dry: the moisture in the packing is quite enough to spoil your film. Plenty of professional troupes have found this out, very much to their sorrow!

Finally, seal your film-can so it is air-tight. The best way to do this is to apply adhesive tape, and then seal this thoroughly with paraffin or wax. If you do this, and have your film and its packing thoroughly desiccated, you'll find there's no reason to have your film shipped home in the ship's refrigerator-room (if any.) Just be sure, however, that it isn't stored too close to the heat of the boilers.

In the arctic regions, your problem is strictly that of cold. If you know you're going to such a locality at a season when it's cold (don't forget that the Alaskan summer can be as hot and damp as that of Minnesota!) begin by preparing your camera to operate at abnormally cold temperatures. Don't depend too much on laboratory "coldroom" tests. We tested

all our equipment that way to temperatures down to 40 below—and then when we got to Alaska we found that things worked very differently in practice!

Take the camera completely apart, and get every bit of lubricating oil and grease out of the mechanism—including the lens-mounts. Replace this either with the special, low-temperature oils made for such purposes, or with the very finest grade of watch oil you can get. If you can't get these special lubricants, you'd better let your camera—especially the ball bearings—run completely dry. In the low temperatures, the contraction of the metal will be quite sufficient to increase clearances so this can be done. You may find, however, that the batteries which normally have enough power to keep your camera at speed won't do it in the cold, for their power, too, drops with the temperature. You can get special batteries that will work in these temperatures; or you can use extra batteries in series.

If your shooting is primarily exteriors, keep both cameras and film constantly at outdoor temperature. If you bring the camera indoors, where the air is warmer, moisture will condense on the cold metal, and especially on the cold glass of the lens. It will fog up your interior shots—and then when you take the camera out into the cold again, for more exteriors, it will freeze into ice, not only in the mechanism, but on the lens-surfaces, and you're likely to have no picture at all.

If you can, keep two separate outfits, and two separate film-supplies, one for exteriors (kept at outdoor temperatures) and the other for interiors (kept at room-temperatures.) If you can't do this, resign yourself to completely cleaning and drying cameras and lenses every time you go from indoor to out, or from out to in.

Working in arctic temperatures, you'll naturally wear heavy gloves or mittens most of the time. But you can't make precise adjustments with them on. So you'll find it a very good idea to wear a pair of thin silk gloves under these mittens. They'll permit you to make accurate adjustments, and at the same time keep your fingers from actual contact with the frigid metal. And if you ever stuck your finger or tongue against a bit of cold metal when you were a boy, you know that your skin, brought into contact with really cold metal, has an unpleasant tendency to adhere to the metal—and to stay there even when the rest of you moves away!

Shipping film from these excessively cold regions to more normal climates for development can be quite a problem. When we made "Eskimo" up in Alaska, we had a good deal of trouble from "static" flashes. These are a result of flashes of static electricity which crackle, like sparks from a cat's back, when the film is unwound. On the screen they look like momentary flashes of a spraggly tree-trunk—usually right down the most important part of the frame.

We found the trouble came from extreme and perhaps repeated changes in temperature. Our film went to Seattle

by air, and remained pretty cold during this part of the trip. Then in the express office and in the rain on the way to Hollywood, it was suddenly brought to normally warm room temperatures. But when we saw to it that the film was transported in a way that permitted it to change from the temperature of the Alaskan winter to that of California slowly and gradually, our trouble was gone.

Finally, remember that no matter how good a cameraman you may be when you're on your home grounds, when you get out into the foreign field you're likely to be working constantly under completely unfamiliar conditions of atmosphere and lighting. Working in the English climate, for instance, is very different from anything you'll encounter in the U.S.A. You'll meet entirely different conditions in the tropics, in Alaska, and almost everywhere you go.

Make it a point, in strange and distant locations, to ask the man who already lives there. You may not necessarily have to ask questions; just look up the local photographer—there's always one, I've found—and spend a little time getting acquainted. Look over his negatives and prints—especially outdoor shots—and indulge in a little pleasant photographic rag-chewing, and you'll probably get the tips you want in the process.

That's an idea I've found pays big dividends. The first thing I do when I reach an unfamiliar location is to get acquainted with the local picture-maker, and I soon find myself on the right track to beating the local atmospheric hazards.

As I say, there's nearly always someone who makes pictures, no matter where you go. He may not necessarily be a cinematographer; he may not even be a professional (some of these amateurs are as good as most professionals, anyway) but he knows the conditions of picture-taking in his locality. You'll find some exceedingly fine professional and amateur photographers in England, for instance. There are some crackerjack native cinematographers in India, all the way from Bombay to Calcutta. "Down under" in Australia, you'll find some excellent professionals, and some of the world's most capable amateurs, as well. If any of our camera crews get to Russia, they'll find many fine and friendly professional cinematographers there, too—surprisingly many who can and do read *THE AMERICAN CINEMATOGRAPHER* in its original English. Judged by those I and other members of the A.S.C. have met in our travels, you'll find them all eager to help you and cooperate with you, often in ways you wouldn't expect in such distant lands.

There are some uncommonly capable cinematographers in Germany and Japan, too, but at present, I fear they're not inclined to be quite so cooperative or friendly. However, by the time enough Yanks have landed so our military camera units can get to work, it's very likely indeed that even these gentry may have decided that cooperation isn't such a bad policy, after all! **END.**



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## Photography of the Month

(Continued from Page 209)

or film editor is somewhat at fault, for too frequently overly close angles are used on action which could be better told in long-shots, with possibly an occasional, brief close-up, but without the intermediate angles which are too often used.

### THIS TIME FOR KEEPS

Metro-Goldwyn-Mayer Production.  
Director of Photography: Charles Lawton, A.S.C.

Charles Lawton has done more impressive photographic jobs than this, but never any that were better suited to their vehicle. There's nothing to the story but lightly pleasant entertainment, and Lawton very wisely keeps his camera from trying to glamorize things, or to use tricks of lighting and composition to magnify the mood of what are actually mere young lovers' tiffs. It is in ordinary little pictures like this, however, that the amateur and the maker of commercial films can learn more about lighting than he can from the much more pretentious "A's," for in pictures like this, the cinematographer is working in sets closely keyed to reality, and is seeking to get over an impression of reality rather than any particular dramatic mood. From this viewpoint, "This Time For Keeps," like many another well-photographed program picture, is what we would call really profitable filmfare for the camera-minded—and diverting, as well.

### TARZAN'S SECRET TREASURE

Metro-Goldwyn-Mayer Production.  
Director of Photography: Clyde De Vinna, A.S.C.

Photographically as well as dramatically, MGM's "Tarzan" pictures are cast pretty well in the same mold. Clyde De Vinna's treatment of this one maintains excellently the pattern of visual pictorialism set by the earlier films in the series. However, we'll admit that we'd like to see one of these "Tarzan" epics done with more bona-fide exteriors (rather than studio-made ones, with real scenery, rather than painted backings, as a background for Tarzan's heroics) so that DeVinna's surpassing skill at pictorializing real exteriors could have full play.

The treatment of the climaxing action is an interesting piece of cutting, though we personally thought much of this action was too greatly undercranked to give the most convincing effect.

### George Folsey

(Continued from Page 204)

boy or maybe just a fresh kid. And I still remember how grown-up I felt when one afternoon they told me off to take

a taxi and escort Louise Huff—one of the reigning lovelies of 1914—to her Long Island home!

"I so earnestly wanted to make good with the Lasky Company that I tried to learn everything possible about what I was doing. I won't say I literally followed the example of the Admiralty Lord in 'Pinafore,' and 'cleaned the windows and swept the floor, and polished up the handle of the big front door'—but I came as close to it as possible. I learned how to run the elevator (as well as errands!), to operate the switchboard, and everything else I could think of to make myself indispensable.

"Finally there came an opportunity to go permanently out on the set as assistant to one of the cameramen. Assistant cameramen were a very new luxury in those pioneer days. Originally, the cameraman had to do all the work; but one day one of the Lasky 'aces' had an accident, and couldn't carry his camera. So he asked for—and got—an assistant. Soon, all the others demanded assistants, too, on the grounds that if he had one, they deserved one, too.

"Anyway, there I was, a full-fledged assistant cameraman. It was my first introduction to photography, and somehow I took to it instinctively. I'd hate to say how many nights I stayed at the studio helping my boss—or any other cameraman who happened to be working late—shoot titles, develop stills, make prints, check and repair cameras, and so on. I started making pictures on my own hook, too; bought a big 4x5 plate camera, and photographed everything I could think of—landscapes, portraits, still-lives, and everything else—developing and printing my own pictures, and bringing the results to the various cameramen with whom I might be working for criticism.

"Oddly enough, that picture-making

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was the first thing that gave me any real standing in my own family. Up to then, I was just a kid brother, and treated as a sort of necessary evil. I couldn't do anything in particular; I wasn't particularly athletic (I was rather bookish, instead) so I wasn't particularly good at games, and I was both too young and too busy to have many social graces. But the fact that I could take good pictures (at least what seemed good ones then!) set me apart as someone who could really do something distinctive. And what a mystery I made of my work in the darkroom to my long-suffering family and friends!

"Anyway, I became a really good assistant cameraman. At least, for 1915 I was a good assistant: when I look at the intricate job my assistant has today, making intricate follow-focus shots and being wholly responsible for the focus, making out complicated camera-reports, and maintaining one of today's much more complicated cameras, I'm not so sure that the assistant cameraman I was back in 1915 could cut the mustard on a 1942 set! Yet we *did* have one problem the average modern assistant doesn't have to consider: we often had to keep magazines containing film upon which we were making intricate multiple-exposure shots, with ten or a dozen precisely-matched takes on a single strip of negative, segregated until the last take was shot. I couldn't have been too bad, for I assisted some of the best men in the industry, including Arthur Miller, A.S.C., Al Liguori, and half-a-dozen other men whose names—tops then—are now forgotten.

"Finally, after about four years as an assistant, I was promoted to the then new position of second cameraman.

"I lasted less than two weeks on that job!

"The First Cameraman on that picture was a lean, cadaverous Frenchman, with the most sorrowful face I have ever seen. In comparison to him, John Carradine would look fat and well fed. He always went about enveloped in a long, flopping overcoat and an equally amazing tem-

perament. Suddenly, right in the middle of the picture, he decided that he was going to go back to France immediately—and raise violets!

"There was the picture, less than half finished, and minus a First Cameraman. Trustingly, they came to me and asked if I thought I could finish it! With the confidence of a brash eighteen-year-old I said yes—and stepped into the most difficult assignment I have ever had.

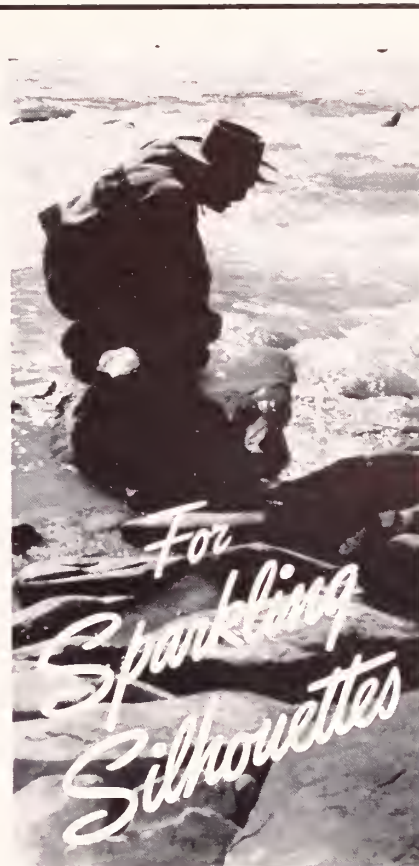
"For it wasn't just an ordinary picture. The star, Alice Brady, played a dual role—and a difficult one. She not only had to talk to herself in the two characterizations, but to walk in all around herself, shake hands with herself, and even pin jewelry on herself. Today's great standbys—process photography and optical printing—weren't even invented yet, so I had to do the whole thing in the camera.

"Probably because I didn't know any better, I worked out a comparatively simple method of doing these scenes. Instead of using elaborate mattes, I used lighting: I did many of the takes on a set completely upholstered in black velvet, and kept this from photographing by simply keeping all light away from it, and concentrated solely on my actors. Using this for some takes, and an identical, normal set for the others, I managed to get what the script called for.

"For the rest, I guess I was lucky. I'd learned pretty well what was then known about photographing sets and people—and I was particularly in luck with my star, for Miss Brady was in love, and I don't think anyone could have made her photograph badly, she was so radiantly happy. At any rate, she was pleased with what I did, and so were the director and producer. I was a full-fledged First Cameraman from that day on.

"Since then, I've carried on, trying all the time to learn as much as I could from every source possible. One thing, for instance, has helped me in particular: the study of the technique of the great masters of painting. In motion pictures, you're working in a different medium, of course; you can call it an art, or not, as you prefer, but it's still visual storytelling, with the great addition of visual motion, both of viewpoint and of action. Yet you can still learn immensely by studying the lightings and compositions of the various great names of painting. Most of them, too, were trying to tell stories visually; and they had the time and the patience to analyze what they were doing more closely than most of us do today.

"As an example, take the picture I'm doing now. (We began it as 'Tulip Time,' but I think the present title is 'Seven Sisters.') It's a Dutch story, about a family of seven girls. With the locale and atmosphere of Holland to portray, I naturally turned for inspiration to a Dutch painter—Vermeer. But only for a key to my visual treatment; slavishly copying his paintings would be wrong, for he dealt with a different period, and had a different story to tell than I.



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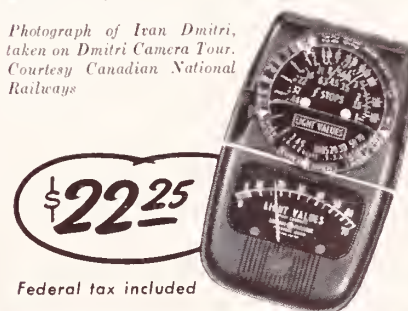
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Yet his work could—and did—guide me in my attempts to get over the visual impression of the Dutch scene.

"But don't jump to the conclusion that I feel I've completely hit the mark I was aiming for in working this way. I haven't; maybe I've peppered it around the outer edges here and there, but in this picture—as in most others—I'm painfully conscious how far short I fall of the goal I'm aiming at. If one out of every thousand people who see the picture can recognize even a trace of the Vermeer influence, I'll be happy—and surprised.

"I suppose that is an inherent weak point in the way we all have to make pictures today; we have to 'be commercial,' with all the accent on speed that this implies. In addition, making movies is never a one-man job, but an intensely collective one, with innumerable people on and off the set injecting their own ideas, personalities and temperaments into every scene. It's all but impossible to turn out really perfect creative, artis-

tic work in a Times Square atmosphere with eight or ten people badgering you with sixteen or twenty loud-voiced hints, suggestions and demands at every turn of the camera. All the really great examples of cinematography, direction and acting have resulted from a rare and intangible combination of story, personalities and downright inspiration that somehow transforms the troupe momentarily from a mere group of individuals into a completely cooperative unit, working like one man to realize something that can only be defined as an inspirational ideal.

"As far as cinematography goes, I think it is a prime essential that the cinematographer approach his work in a spirit of complete honesty. If you like a thing, say so; if you don't, be equally frank about saying no. In the same way, if you can do something, don't hesitate to say so—and don't be any more hesitant to admit you can't do it if you feel you can't. As an example, if you are assigned to photograph a star, and find you can't do as good a job of bringing out that star's beauty or personality as some other cinematographer, for heaven's sake, say so! If you try to carry out the assignment regardless, by optimism or brute force, everyone's bound to suffer: your star's appearance and the picture will suffer from inferior presentation—and you'll suffer, too, because you turn out what other folks, at least, will regard as inferior work. Whereas if you have the courage to step aside and admit somebody else can do that particular job better than you can, everybody will benefit: the star will look better, the picture will probably be better, and your associates will think the better of you because you've had the guts to be on the level about your own work.

"Many amateurs have asked me how to get glamorous lighting-effects in their own home movies. To my mind, it's just a matter of applying common-sense, spiced with a bit of artistic feeling, to the problem of lighting.

"In a close shot of a person—man or woman—the first step is the key-light. Most amateurs don't diffuse their lighting enough; and a well-diffused key-light (which gives the effect of soft light coming from a source of large physical dimensions) nearly always gives the most flattering effect.

"Move this light around your subject, moving it from side to side and up and down until you find the angle from which it gives the most appealing result. That's the place for your key-light. The rest of the lighting—filler-light to relieve the shadows, 'kickers' to produce interesting little highlight accents on hair, eyes, and so on—will just naturally fall into place once you've found the right key-light treatment.

"Don't forget the use of shadows. You can mask off part of the key-light to produce interesting shadows on the subject's face, using the highlight to accentuate the best features, and soft shadows to subordinate other features. Decorative shadow-patterns on the back-wall are just as important; but they must be perfectly coordinated with the lighting on the subject, so that the whole effect of the lighting is believable. Above all, remember to keep all the lighting—highlights and shadows alike—soft. If you analyze any glamor close-up on the professional screen, you'll see that half the secret, at least, is maintaining a flattering softness throughout the lighting, no matter how much or how little optical diffusion may be used on the camera." END.

## Cartoon Production

(Continued from Page 203)

background music supplementing action, but music working *with* action.

Animated cartoons are a *caricature* of real-life actions and events, differing distinctly from live-action pictures which are a *dramatization* of the same. Music and caricatured action have always been inseparably linked, right up through the history of visual entertainment, starting way back in the gyrations of primitive tribal dances. The ballet with its terpsichorean interpretations of emotions and actions, caricatures real life rhythmically. If these exaggerations were to follow the indefinite tempo of real life, the effect would be silly rather than pleasing.

Live-action pictures have in many cases taken a cue from cartoons, and synchronized background-music to fit certain types of comedy actions. They admit it when they call this procedure "Mickey-Mousing." But in this case the music is composed *after* the action is shot. (Except in the case of ordinary dance routines, which do not come under the classification of dramatic action.) Cartoons have the jump on their live-action big brother in the use of music to work in perfect sync with action because of the absolute control possible over both of these elements.

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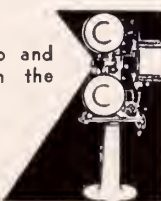
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toon that hasn't music in it. About the only time you'll find a lack of music is under a loud sound-effects pattern, or a line of dialog, in which case the presence of more sound would simply muddy-up the track. But then again, the dramatic effect of certain types of dialog can be heightened by the proper punctuation of music. And often enough, orchestrations have been so arranged as to substitute for sound-effects.

The consideration given music in the planning and timing of a cartoon is of the highest. Many directors insist on a musician working in the room with them during the process of timing a picture. In fact, director's units at the Disney studio are called "music rooms." A good story-minded musician is worth his weight in aluminum and rubber. He can open up new possibilities in the staging of a piece of business by suggesting musical themes to work with the action. His music can tell the story almost as much as the action. You could take the orchestra track from a good cartoon, run it alone, and follow the story simply by the accents, pacing and dramatic coloring of the music itself.

The timing of a cartoon is based entirely on musical beats of varying tempos, according to the pace and speed of the action taking place. The choice of a musical tempo for a sequence of action depends upon the type of action. A fast chase will require a rapid musical beat; a sneak action, a slow tempo, and so on.

From the standpoint of their musical backgrounds, there are three distinct types of cartoons being produced today. In each, music plays a role of varying importance.

In the first type, music plays a part equal to the action in importance. It more or less sets the pace for the action, through the use of rhythm or dance sequences in telling the story. In planning the story, the music is given as much consideration as the action, and the musician will work hand in glove with the director during the timing of the story for animation. All action is designed to follow a definite musical beat throughout. The "Silly Symphony" cartoons fall into this category, being classed as "musicals." Action, for the most part, will compromise to music, in order to maintain a constant feeling of rhythm and tempo throughout the picture.

The second type of cartoon subordinates music to the action entirely. Here action is the first consideration in telling the story, and the music is written later to fit. In this type of picture, no attempt is made to make the music a predominant feature as in the Silly Symphony series. They employ no dance or rhythm sequences to supplement the story-telling. Most of the current Donald Duck, and Pluto cartoons, and the Goofy series on "How To Ride a Horse, etc." exemplify this type.

In the third type, music governs every factor of the cartoon; tempo, story and action. "Fantasia" is an example of this

type, in which the complete orchestration is pre-scored in its final form before production. The story is designed to fit the music, and the animation timing is held to the rigid tempo of the pre-scored music.

In each of these types, the procedure of timing differs, but in general, the problems are the same. In all cases, the action is in the final analysis, patterned to a musical beat. The only difference, as can be seen, lies in the way this musical tempo is established.

It might be well to draw a distinction here between musical tempo and story tempo. Musical tempo means simply the beat of the music. Story tempo, or story pacing, implies the rate of the progressive story-points which build to the climax. There is absolutely no relationship between the two, because story tempo—or pacing, as we'd better call it to avoid confusion—is based entirely upon an intangible relationship of story ideas, one to another, arranged so as to maintain and build audience-interest. Musical tempo sometimes supplements story pacing, but cannot make up for the lack of it. No amount of fast action and fast music can revive the audience's interest in the progress of the story once it has lagged due to side-tracking business and lack of directness in presenting story points.

It is a big part of the director's problem when timing a picture to maintain a constantly building pace in the picture.

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A "running reel" (mentioned in the first installment of this series) is a sure check on story pacing. The director will try and get one together as soon as possible, shooting the story sketches, and whatever working layouts the layout-man has had time so far to develop. The sketches and layouts are shot to the lengths indicated in the director's timing, and dialog and sound-effects tracks are organized to sync with the picture. This reel represents the full screen timing of the picture. Then, as the animation develops, it is cut into the picture reel in place of the story sketches and still layouts, and so, piece by piece, the completed picture is built.

If the picture is a "musical," a piano or organ track is recorded at an early stage of production preparation, to set the musical tempo of the picture, and to establish footages. But where there isn't any predetermined music to set tempos, the director has arbitrarily to choose the musical beats.

The choice of a musical tempo to fit the action depends on the character of the action—slow, fast, or indifferent. A table of standardized musical beats has been established for cartoon work, based on the relation of the frequency of the beats to the speed that film travels through the projector (24 frames per second). Thus, an "8 beat" means one beat every eight frames of film, a "12 beat," every twelve frames, and so on.

Most action can be laid out on musical beats ranging from a 6-beat, for very fast action, up through a 16-beat. Any of the intermediary beats—7, 8, 9, 10, 11, 12, 13, 14, 15—can be doubled or tripled to fit very slow action. For example, a slow sneak action is timed with the main accents every 32 frames. Thusly, each measure of music will be 32 frames long.

Where the choice of a beat is purely arbitrary, and not governed particularly by any set action, a "free beat" is chosen. This is usually either patterned at two 12-frame, or two 16-frame beats to each musical measure. Any combinations of either of these beats will fit most any action, slow or fast. 2-12's can become 4-6's, for fast stuff, or 4-12's, for slow actions. Free beat is most generally used in the second type of cartoon de-

scribed above, in which the action is set first, then the music.

The standard of measurement in cartoons is film footage. More specifically, time in cartoons is not measured in seconds or minutes, but in terms of the amount of film that passes through the projector at the standard rate of 24 frames per second; 90 feet a minute. For example, directors think of timing an action according to film footage, and not in seconds. An action that takes six seconds to pantomime, will be indicated as a "nine foot" action, as it takes nine feet of film six seconds to be projected. In accordance with this, metronomes and stop-watches are marked off in film footage.

The timing of a picture is plotted on paper in the form of bar work sheets, which are ruled off into squares to indicate beats and bars, or measures of music. The length of each measure is marked according to the musical tempo. A record of every technical detail concerning the timing and footage of a picture is kept on these bar sheets. Scene cuts are indicated at the proper places. Dialog and sound-effects tracks are indicated; each "take" carefully marked down as to its starting and stopping point in relation to the measures. Everything is accurately spotted exactly where it will occur in the course of a picture's footage. The bar sheets are the director's bible; a master-record of the picture's progress.

Making out bar sheets generally involves a lot of detail and figure-work, and this job, along with a lot of the other more non-creative tasks concerned with directing, is taken over by the assistant director. He is a humble, earnest individual, somewhat in the same position as a second lieutenant in the army; recipient of all the grief jobs, and none of the glory. He is the trouble-shooter for the director's unit, and must know all the answers for everything concerned with the picture's progress through production. He is in a natural position to be a fall-guy, and is quite apt to be blamed for anything that might go wrong that can't be hung on someone else, no matter how far-removed the trouble might be from his own particular sphere of influence.

But it really isn't as bad as it all sounds. The assistant director's job is one of great responsibility. He has to coordinate all the many changes that constantly occur during production and see that they're carried out. One of his duties is to see to the recording of sound-effects; all the pops, squeaks, groans, rattles, crashes, gongs, etc., etc., in the picture. Sound-effects play an important part in the humor of a cartoon, particular emphasis being placed on getting sounds that are caricatures of the real thing as much as is the exaggerated action.

Most of the sound-effects are single sounds, but some of them follow a pattern of action, and must be recorded at the same tempo of the action. Since the



action has already been timed out by the director and indicated on the bar sheets in relation to musical beats, all the sound-effects man need do is copy off the measures that fit the action, and write the pattern of the sound-effect like a musical score, quarter-notes, half-notes, etc., indicating the main accents of the sound.

The sound-effects men, who are trained musicians, then record their sound to a definite musical beat, following the score to hit the accents in accordance with the pattern shown in the musical measures.

Many are the ingenious, Rube Goldberg-ish contraptions that have been devised by sound-effects men to obtain ordinary, every-day sounds. However, many sounds are best recorded from the actual source. In the early days, when microphones couldn't be depended upon for true fidelity of pickup, certain sounds were best recorded by artificial means. But present-day mikes reproduce just about what's taking place, so real water, for example, is used to back up a screen rainstorm instead of a lot of gravel rolling around inside a barrel. If a gasoline motor sound is needed, there's no call to use the old standby, a flock of syrup pitchers whose lids were flopped up and down in quick succession to approximate the sound of the exhaust. No, they drag a gas engine onto the sound stage and record it. And it sounds surprisingly like a gas engine, too!

Even thunder—recorded artificially by rattling pieces of sheet metal—has been provided by nature in many instances. And no longer can the wiseacres sit in the theater and say, "Aw, I know how they got that brake-screch. They dragged a cheese-grater across a drum-head!" Nope, wrong again, my friend. They set a mike up close to the street pavement, started a truck going, and slammed on the brakes. Result: a beautiful sound of tires screeching on pavement. One such sound-effect, originally recorded for the Silly Symphony, "Tor-toise and the Hare," has been since used in every case where such a sound is needed. It's a good thing that this sound is safely recorded, for under present tire-famine conditions, the sound-effects man would probably resort to a cheese grater on a drumhead or something, rather than waste valuable rubber!

When the sound-effects are all recorded, the assistant director sees to it that they're cut into the sound reels in proper synchronization with the picture. The sound-effects track and dialog tracks are kept separate up until the final dubbing, when all tracks are combined. Consequently, a change of footage in the picture-reel during production must be followed through in like form in all the various sound reels, or else the whole works is thrown out of sync. The assistant is kept hopping to keep up with the footage changes, for no one bothers to tell anyone else when a scene length is altered, assuming that such information will reach the proper person via

telepathy. But it's just one of the many crosses the a.d. has to bear, so he merely sighs resignedly, figuring what the heck, it's a job.

Concurrent with the timing of the picture by the director, the layout-man will be planning the staging and setting. The layout-man functions much like the art-director in a live-action studio, with a little of the director's responsibility and that of the director of photography mixed in. He plans the exact pictorial locale of each scene, plans the size and movements of the characters, figures out all of the camera moves such as trucks (moving toward or back from a character), and pans (following a character along). He considers interesting ways to present the artistic side of a scene—special-effects, atmosphere shots, interesting camera-angles, and so on.

The layout-man must be an all-around artist, being fully acquainted with perspective, rendering and architecture. A good sense of story, comedy and dramatic values is necessary in order to be able to stage the picture so that its pictorial side works in complete accord with the action. He must be able to draw anything in the way of props or backgrounds—modern, prehistoric or futuristic.

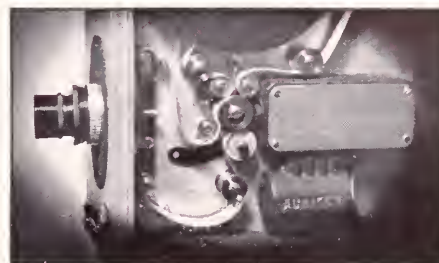
The story man usually takes a stab at staging the picture in regard to cuts, size of characters, set-ups and direction of action, but cannot spend the additional time necessary (and "spending time" is an apt phrase in cartoons, since time is money) to work out the finished pictorial effect of the picture. He's mainly concerned with presenting his ideas in the simplest, clearest and most direct form. If he were to worry too much about finished set-ups or the mechanics of production, it's likely that he'd be sidetracked from the story line.

But often enough, the cutting and staging as outlined on the story boards provides a good pattern pictorially as well as dramatically, and the layout-man's chief job is then to design practical, working setups for the animator. If he possesses good story sense, he can often add to the presentation of a piece of business by designing the staging in an interesting fashion, suggest an additional cut or closeup to point a gag, or work out atmospheric effects to supplement the mood of a scene; helping the story not only to read clearly, but interestingly as well.

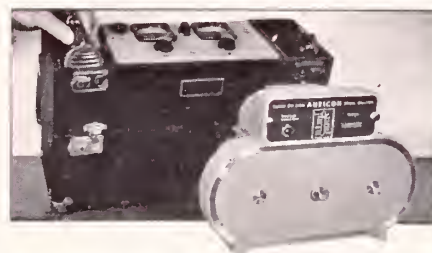
Many considerations enter into the designing of a set-up in which a character's action is to take place. The set-up must be pleasing pictorially, yet be practical so that the animator can move his character around with ease and freedom. It must be designed so that the character will be of a practical size to animate. Very large figures, or very small ones, are difficult to handle. Likewise are characters that work in set-ups with the camera shooting up or down at them from an extreme angle. He must compromise constantly between

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aesthetic values and practical necessities.

At this point, a word might be put in to distinguish between the layout-man and the background artist. The background man's special job is to render up in color the finished background that the painted cels will work against and which will be photographed in Technicolor. He exercises no particular creative initiative, but follows the toned pencil sketch of the background prepared by the layout-man, reproducing it faithfully for size and set-up in water-colors or oils.

Illustrating this article is a simple, yet characteristic example of the progressive stages that a story idea goes through in production. The set-up sketch that the layout-man designed follows the first-hand suggestions of the story-sketch artist for direction of action, but improvements in the staging of the scene were instigated to add to the dramatic and pictorial effect.

First, the rough suggestions for the background were developed into a well-rendered forest scene. Then instead of keeping a close shot on the character, the camera was pulled back to a medium shot, with the purpose of stressing the smallness of the baby deer in relation to the huge forest around him, and to punch his problem in hopping over the large log.

The size of a character is governed only by his relationship to objects of a known size around him, and the best way to dramatize the littleness of the deer was to keep him small in the set-up. This is one example of the way the layout-man can help put across a story idea by the proper design of the setting.

The animator is provided with a tracing of the layout-man's background, along with a series of rough poses to indicate the exact path of action of a character, as well as careful indications for sizes and perspective. The position of the camera at the start and finish of the scene is also shown, established by the layout-man with an eye toward the best composition of the scene. The animator is free to move the camera around to suit the action of his character, but must maintain a good composition at all times.

The technicalities of camera moves in relation to the animator will be explained in more detail in the next installment of this series, which will deal with Animation.

Every procedure concerned with the production preparation of a picture is overlapped in order to move the story into animation as soon as possible. These procedures have been handled as separate phases in this article for the purpose of clearer explanation, but in actuality, they're all going on at the same time. While the director is timing the picture, the layout-man is busy developing the layouts, and the assistant director is organizing test reels and recording sound-effects. Then as soon as the story sketches have been translated into working set-ups, the director starts calling the animators in to pick up animation.

The animation of a picture might start at any point in the story, depending upon the layouts that have been completed, the dialog that has been already recorded and upon the availability of the animators themselves.

Animators are "cast" on pictures according to their individual aptitude for handling certain types of action or characters. Some animators are best handling personality animation, others specialize in action stuff. The Disney studio has animators who specialize on certain characters—"Duck men," "Pluto men," and so forth. With stock characters like Mickey, Donald and Pluto, who are used over and over again, such specialization is very desirable. The animator, in picture to picture, can work towards the improvement of a character in drawing and in the development of its personality, and this specialization also eliminates the need for an animator to "warm up" on unfamiliar characters every time he starts on a new picture.

The animator is usually familiar with the story, having attended at least one of the story meetings, but sometimes, just to be safe, the director will outline the complete continuity to him, and then concentrates on the sections that animator is to handle. This scene, or sequence of scenes, is explained in the minutest detail by the director who gives his conception and timing of the action. The animator will "play back" the action to the director, to insure that he has the intent and purpose of the scene firmly in mind, and also to suggest better timing and pantomime.

Between the two of them, they plot the exact course of the action on the layouts, and time it out, accounting for every action down to the last frame of film. If there's dialog in the scene, a print of the dialog is on hand to be run on a Moviola, accompanied by pantomime.

The director must also have a streak of the actor in his jack-of-all-trades makeup. He must have a feeling for all the basic fundamentals of pantomime. During the course of explaining action to the animator, he will often go through all sorts of gymnastics. He will crawl on the floor, stand on his hands, bark like a dog, grimace like an ape or wriggle in the fashion of a



snake. A spectacle reserved only for a chosen few is the sight of a full-grown director down on his hands and knees, tongue hanging out: "Like this, see? I want to get a funny little fanny-wiggle on Pluto when he spots that bone and anticipates running for it, see?"

The director will set no absolute, ironclad rules for the performance of a character. He is fully cognizant of the animator's problems and knows that the final screen performance is decided down on the animator's drawing-board. Animators are highly creative draftsmen with definite ideas of their own about staging and pantomime. A good animator usually will uncover new action and performance possibilities, working close to the scene as he does, that could never be visualized by either the story man or the director.

So, in the interests of diplomacy and common-sense, the director will allow plenty of leeway to the animator in the handling of the action in order to stimulate any creative impulse which might otherwise be held in check.

Any controversy between the animator and director at this point will usually concern the timing of action, and not about any phase of the story. Each has had his chance to get in his crack at the story development, for by the time the story reaches its last meeting prior to production, it's "Speak now, or forever hold your peace!" The next chance to change anything will be when the first animation tests are looked at in the running reel.

Story revisions sometimes occur at this point, for the possibility of change and improvement is always present when working with a creative medium. But when the story is being handed out for animation, it is assumed that the continuity is set.

When the performance and staging of the action is agreed upon by the director and animator, they sit down and lay out the timing of the action on exposure sheets. These sheets are long pieces of paper ruled off horizontally to indicate frames of film and vertically into columns for action notes, "cel" levels, dialog, and camera instructions. These exposure sheets represent a complete chart of a scene's progress just as the director's bar-sheets keep tab on the overall picture, and serve to guide everyone concerned with the progressive technical steps of production; animator, in-betweeners, checker, inker, painter, and cameraman.

(The next installment of this series will deal with the animator's problems—technical and artistic—in bringing a story to life through animation.)

## Commandos

(Continued from Page 201)

den, I believe, used Super-XX all the time.

"Any way, there we were approaching

the beach; I'd arranged with the naval man in command of the launch that I couldn't afford to step off into deep water because I mustn't wet my equipment. Finally we grounded, and after waiting for the troops to land, the naval man assured me we had made a dry landing, and, holding my cameras above my head, I took one step out of the launch on to a firm bit of rock.

"With all the smoke you couldn't see a yard, so I turned to call to Roy, took one more step and went wallop into the icy water right up to my waist! Luckily none of the equipment was damaged, but I myself of course was soaked right through, and the cloths I had put in my trousers' pockets for wiping the lenses if we got condensation were ruined. After an hour or so of strenuous activity my pyjama trousers began to dry, and my legs got a bit more comfortable, but my feet never got anything better than soggy and frozen.

"After wading ashore and getting some stuff of the troops landing, Headquarters was set up in a house near the beach and we set off with the advance parties. Roy, Harry and I kept together pretty well all the time, and later on Jack Ramsden joined us from Maaloy.

"It was a bit strange at first, as we couldn't see the enemy and didn't know what everybody was up to, but we soon got used to it and happily carried on shooting till we re-embarked about 2:30.

"There was a good deal of noise all the time, shells from the naval escort, mortars, dynamiting and gunfire, and a fair amount of bullets flying about—enough to make you run pretty hard when crossing any open space. But none of us had any very narrow escapes that we know of, though we did all jump when we saw an unexploded grenade lying in the snow and hurriedly tossed it into the sea.

"One thing that stuck in my mind was the troops finding a case of apples, which they opened and devoured as they went about the job (I was lucky enough to sample two). They were shiny green apples, like Newtons, each wrapped in

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crinkly paper and I wondered where they had come from.

"After a bit the civilians began to venture out of their cellars, somewhat upset and scared, with the children shouting with excitement and some of the women crying quietly. Many of them gathered a few belongings together and went down to the beach to come to England, but nobody was asked to come who didn't volunteer.

"We got some nice stuff of the civilians, but for fear of reprisals it had to be censored out of the newsreels (it was the only stuff censored). That shot of the notice saying "Photography Forbidden," which has amused people, was the idea of the information officer with us.

"Well, so we carried on shooting till the re-embarkation signals went. My two Eyemos behaved very well: no condensation on the lenses, and though once or twice I thought they were running slow (as well they might have in that cold) everything turned out O.K. The only mishap was near the end, when, on re-winding one, a spring went (it was only the check spring though it felt and sounded like the main) the key flew out and caught a soldier smack across the nose: no serious injuries fortunately. Altogether the two of us shot 6,000 ft.

"It was a rush for the labs. (Kay's, West End) but they made a very good job of it. The only trouble was that with 45 Eyemo spools, not to mention 8 cans from Jack to deal with, they had to work the bath for the Super-XX stuff and let the Plus-X take its chance, so the quality of the Plus-X could have been a little improved. However, it was all very pleasant, in retrospect at any rate, and the public seems to have enjoyed the results, so I hope we have another job like Vaagso to do as soon as possible." END.

## Professional 16mm

(Continued from Page 200)

by means of an electrical filter network, accurately simulates the final reproduction characteristics of the 16mm. recording when played in a commercial 16mm. sound-projector.

For permanent studio installations, a rack and panel studio system is available which resembles in many ways its 35mm. counterpart.

From the above description of the equipment available for professional 16mm. film recording, it will be evident that the only limitations on what can be done with 16mm. recording are the time, effort, ingenuity and money which the professional producer is willing to expend to get the result he wants. Likewise, unsatisfactory results in 16mm. recording are not the result of using 16mm. film, but are generally traceable to a lack of sufficient equipment or skill in manipulating the equipment or improper processing of the film after exposure.

Fortunately for the 16mm. producer, practically all of the equipment which is standard in 35mm. editing is also available in 16mm. The Moviola Company, who have long been leaders in the

design of equipment for 35mm. editing, have brought out similar equipment for 16mm. editing including 2 or 4-reel differential rewinds, 2 or 4-way film-synchronizers and the Moviola preview machine which is a duplicate of their 35mm. machine.

It is the opinion of this writer that the equipment which Moviola makes is the best available anywhere today. There are two very important considerations in choosing a 16mm. film synchronizer: 1. whether or not the machine holds the films so that there is absolutely no possibility of slipping, and 2, whether or not the machine itself scratches any part of the film area.

There is no question that 16mm. originals, either negatives, reversals or Kodachromes, get considerably more handling than is customary with 35mm. originals, so that equipment designed for handling 16mm. originals must be *absolutely* free of the possibility of scratching. The film preview machines are designed for use with work-prints only, and are almost certain to scratch originals to such an extent that they cannot be used.

The running of originals in any type of mechanical device, either projector, editor, Moviola preview machine or even a film viewer, cannot be recommended if consistently professional results are to be obtained. It is best to make black-and-white work prints of all originals and work with these until the final stage of

matching the originals to the work print is reached.

For non-sync editing, both the Bell and Howell "Filmotion Viewer" and the Craig "Projecto-Editor" are quite satisfactory editing devices and are considerably lower in cost than any of the Moviola viewers or preview machines.

Several splicers are available to the 16mm. producer including the Craig, Griswold, De Brie and the Bell and Howell Professional machine splicer. With all of these machines it is difficult, if not impossible, to make a splice in 16mm. negative which will not show on the screen. Probably the best machines from this standpoint are the DeBrie and Griswold, but until some manufacturer develops a butt splice cutting the film on a bevel, 16mm. splices will continue to be a big problem in professional production.

In reversal and Kodachrome films it is not difficult to get an acceptable splice with most of the available machines. This may be advanced as one of the advantages of producing in reversal or Kodachrome. Another advantage of the reversal method over the negative-positive system is that all the splices are made in the reversal original, which is printed on a fine-grain duplicate negative which of course has no splices. All of the final release-prints are then made from this duplicate negative which has no splices, and this reduces the likelihood of trouble in printing. (To Be Continued).

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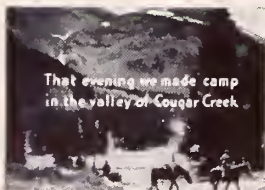
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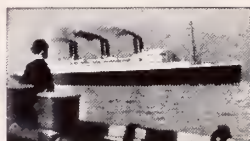
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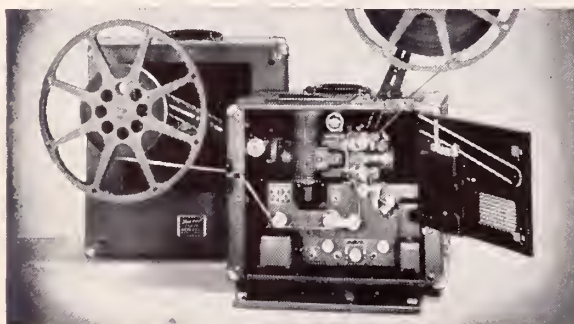
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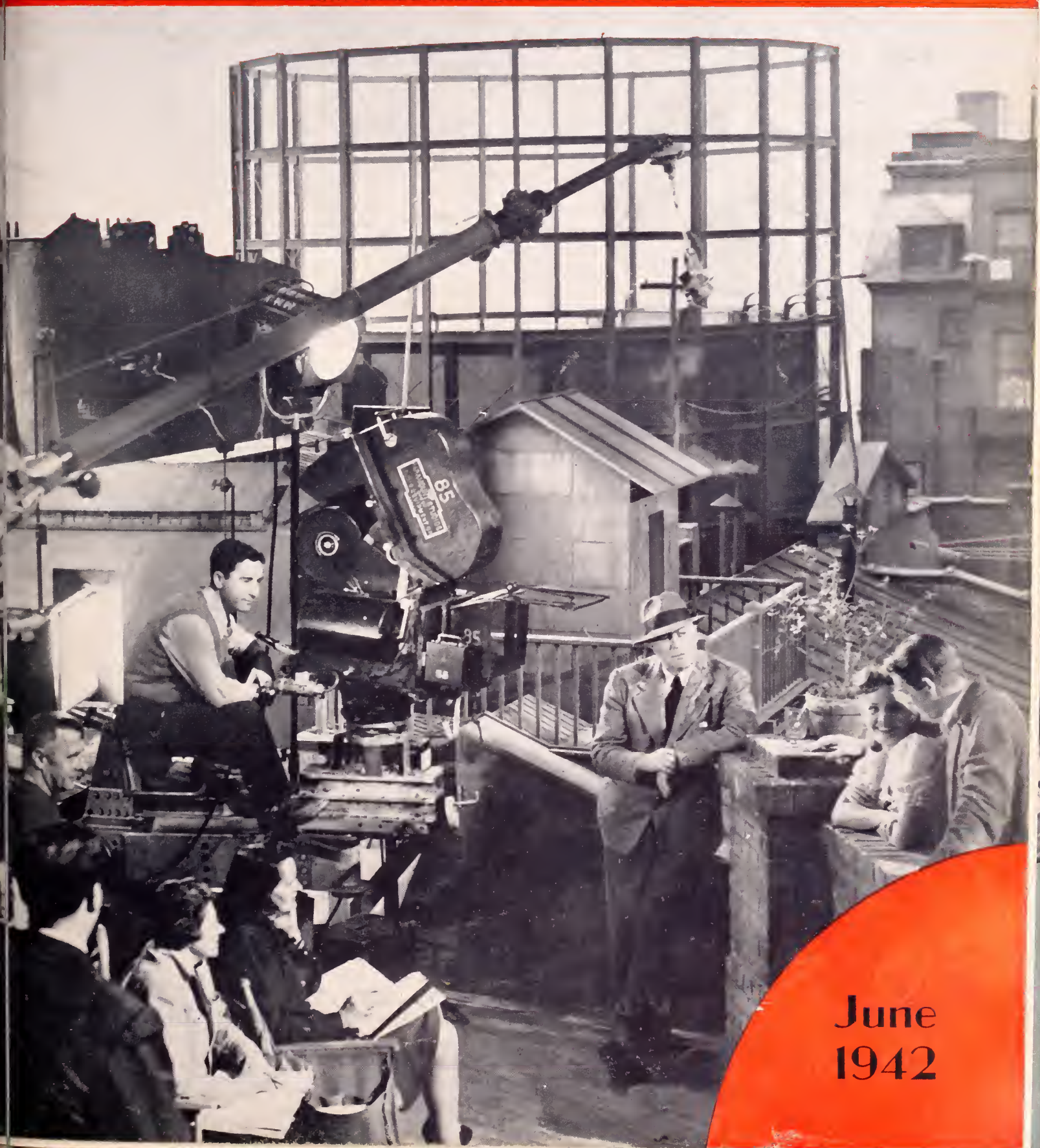


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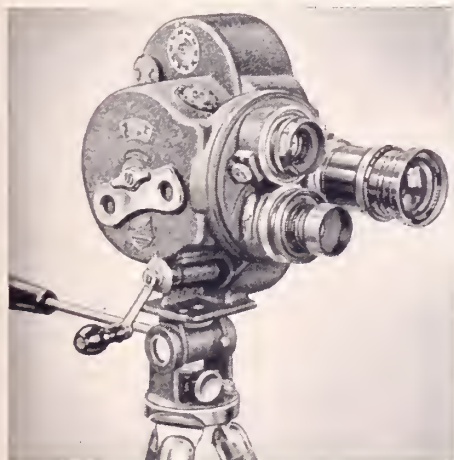
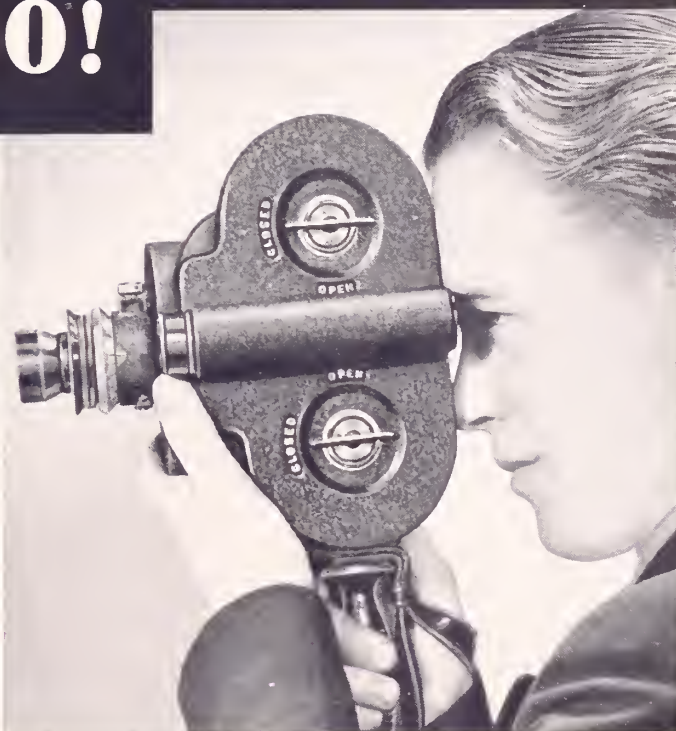
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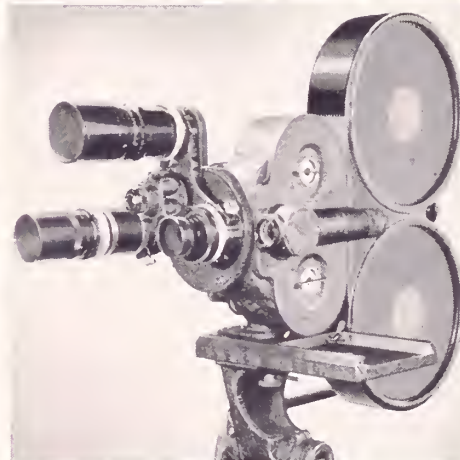
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# AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 23

JUNE, 1942

NO. 6

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### The Front Cover

This month's cover shows Leo Tover, A.S.C., filming a rooftop love-scene for Paramount's "Young and Willing." The background of the set is a particularly interesting combination of full-scale and miniature construction. Note placement of key-light on camera-boom. Photo by Talmage Morrison.

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# Visual Suggestion Can Enhance "Rationed" Sets

By JAMES WONG HOWE, A.S.C.

has made our industry great. We have all of us gotten in the habit of approaching a production with the thought that if the script calls for something, we might as well build it—and build it pretty completely, at that. And often, as most of us can testify from our own experience, we have been in the habit of building a good bit more than the script action really called for.

Not long ago, for instance, I had lunch with a 16mm. business-film producer who recalled a visit to a studio set some years ago. He was greatly impressed, so he said, with the completeness of one very large set he visited—

a night-club sequence for which almost the whole of a large and elaborate night-club had been constructed. Naturally, he watched for the release of that picture, to see how that impressive set looked on the screen. Imagine his amazement when he found the sequence had been cut down to the barest skeleton, played entirely in close shots of the principals at a table against a back-wall, with nothing of the elaborate set around them showing!

Clearly, that sequence could have been made just as well without any of the elaborate and expensive construction which was actually involved. A table, a simple background flat, and perhaps a potted palm or a stock piece of rail-

ing, could have gotten the idea across equally well.

On the other hand, it has several times been my privilege to work with camera-minded "production designers" like William Cameron Menzies and Gordon Wiles. On such productions, there need be very little in either construction or film-footage which does not reach the screen in the release-print. At the very start—usually in a process of close collaboration between the designer, the director and the director of photography—the script is broken down into a series of sketches, each of which accurately outlines the visual aspects of one camera set-up.

Studied in the proper sequence, these sketches provide a remarkably accurate preview of the production, before even an inch of film is exposed, or a single set designed. It becomes clearly evident how the visual aspects of the story will fit together. Weak spots can be strengthened, and non-essentials eliminated.

At the same time, it becomes clearly evident just what construction and how much of it will be really necessary. If, for instance, a given sequence "hangs together" properly in these pre-production sketches without recourse to reverse-angle shots, there will obviously be no need to provide for such angles when the sets are built. If a sequence "plays" better by avoiding the conventional one, two, three presentation of long-shot, medium-shot and close-up—eliminating, say, the conventionally establishing long-shot as visually or dramatically unnecessary, the set need not be built to "cover" that wider angle.

Working in this manner (and always presupposing an understanding cooperation between designer, director and director of photography) we can repeatedly find that we can get effects which are not merely "just as good," but actually *more convincing* by calling upon the camera's powers of suggestion rather than taking the easy—and expensive—route of literal accuracy.

A very interesting demonstration of this occurred in two of my recent pictures—"Kings Row" and my current production, "The Hard Way." Both of them had sequences laid in a railroad station, in which a principal player went away by train. In one picture, we handled the sequence on the stage, by visual suggestion; in the other, we handled very similar action by going on location to an actual station, with an actual train.

In "Kings Row," we built a section of the railroad-yard on the studio stage.

**D**URING the past few weeks we have heard a great deal about the recent Governmental order restricting the cost of new construction in motion picture sets to a maximum of \$5,000. All of us have heard the opinion expressed that this will work a serious hardship on our major productions, and particularly that it will drastically reduce "production values" in many films of the type most popular today, perhaps even to the point where such productions can no longer be made.

To me this seems like an unduly pessimistic viewpoint. Certainly, these restrictions will cause many inconveniences. They will make us change many methods to which we have long been accustomed. But it does not follow that the change will be entirely for the worse, or that the results need to restrict either the visual quality or the dramatic variety of the product we put on the screen.

It does follow, though, that we will have to find new ways of doing many things. We will have to exert our ingenuity to make the camera *suggest* effects we can no longer build in literal actuality.

In this, it seems to me that we are strangely fortunate. The medium in which we work is one that makes possible literal reproduction, it is true: but it lends itself even more powerfully to suggestion, if visual-minded creative artists have a chance of working together to pre-plan what is placed before the lens.

Up to now, most of our major productions have suffered to some extent, at least, from the very prosperity which



Comparatively little construction is needed to get this very convincing effect.



As we needed other parts of the yard for other action, we built quite a large set; but insofar as this particular sequence was concerned, we could have gotten the same effect with only a relatively small amount of construction. The part we actually used consisted of just the front of the station, and parts of two "prop" passenger-cars.

With only this actual construction, we could bring the train into the station by opening with a fairly close shot of our players on the station platform. The train would be suggested by means of appropriately-shaped moving shadow-patterns suggestive of the shadows of engine and cars, the light from the coach windows, and perhaps a puff of steam, apparently from the engine. Then the two "prop" cars would be wheeled into place in the foreground, as shown in the right-hand illustration on Page 247. Our departing hero then boards the train, and the cars start to move off. We can then cut to a shot of his friends on the platform as they watch him leave: here, we can either use another shot similar to the first one, with appropriate shadow-patterns suggesting light from the moving cars, or employ a dolly-shot in which the camera moves away from the watchers on the platform. In either instance, the effect is completely convincing.

In the other production, as I have said, we went to the trouble and expense of taking our company on location to an actual station, and using not only the station, but a real train.

On the screen, I have no hesitation in saying, the "Kings Row" sequence shot on the stage, with a minimum of actual construction and expense necessary, proved much more convincing than the real thing!

The illustration on Page 246 shows another example of simple, inexpensive construction which suggests a great deal more than it actually shows. Getting over the impression of a railroad crossing in a small town, all that is actually necessary to produce this illusion is the little bit of sidewalk shown, the term of horses, the crossing-sign, the fence on the right side, a suggestion of tracks, one end and part of the side of a "prop" box-car, and a painted backing. With very little actual construction, the camera can suggest the scene much more convincingly than if we went out and made the scene—with elaborate period settings—at a real grade crossing!

A good deal of important action in "Kings Row" took place on the set seen in the left-hand picture on Page 247. It suggests a sweeping expanse of countryside—yet all that was actually involved was a small mound of earth, the fence and stile, a tree, and a painted backing. Careful planning of camera-angles, compositions and intercut scenes did the rest.

Another thing we have had too great a tendency to overlook during



Both of these scenes from "Kings Row" were made on the stage, with a minimum of actual set-construction.

these many years of professional prosperity is that due to the camera's one-eyed perspective, you need actually build only enough to suggest to that eye the *illusion* of the setting you want to establish—provided, of course, you can be very sure beforehand just what angles you and the director are going to need to record the action. For example, many of our ordinary interiors are built as three- or even four-walled sets when, for all we ultimately put on the screen, an L-shaped, two-walled set, or even a single wall with a well-planned set-piece or prop in the foreground, would actually suffice.

This point, I believe, is excellently shown in Gordon Wiles' sketch on Page 246. As the upper part of the sketch shows, the camera "sees" a very convincing street scene. Yet the diagram below shows that all the actual construction involved is that fronting the far side of the street, together with enough in the right foreground to suggest the corner of another row of buildings on the nearer side of the street. The diagonal camera-angle chosen, it will be observed, not only is such as to get the maximum effectiveness out of a minimum of actual construction, but also affords the director the greatest possible scope in staging his long-shot action.

It is a very serious mistake to assume that this type of production planning is of advantage only to the "big" productions. If anything, it can do more to justify itself on the smaller productions than on the big ones. Two films released during the past year exemplify this excellently. One of them was "Citizen Kane," a comparatively high-budgeted picture, which was without doubt the most discussed production of the season. In it were some sets—notably those representing Kane's palatial estate, "Xanadu"—which on the screen gave an unusual impression of spaciousness. Yet if you analyze them, most of them were constructed very simply, but with great care to actually build only what the camera needed to see to get its effect. One of the most memorable, for instance, consisted of little more than a staircase, a huge fireplace, and two or three well-placed pieces of furniture, yet it suggested the hugest of

rooms. Gregg Toland, A.S.C. who photographed the picture, has stated that due to careful, camera-minded planning of such details, art director Perry Ferguson was able to build a total of 110 sets for "Citizen Kane" at a total cost of only \$60,000. But it should be remembered that during the pre-production stages of planning, Welles and Ferguson had the very great advantage of having cinematographer Toland working with them for many weeks, lending his camera-minded imagination to their dramatic and architectural talents.

At the other end of the scale is an unpretentious little low-budget picture which was made at a total cost probably not much larger than "Citizen Kane's" budget for sets alone. Independently produced, this picture, "Forced Landing," enjoyed similarly careful pre-production designing by director Gordon Wiles and director of photography John Alton, A.S.C. Due to this planning, and in spite of its very low budget and a schedule of about 10 shooting days, this picture, on the screen, is reported to give an effect of a much more pretentious production.

In both of these extreme instances, it will be observed, three essential conditions were fulfilled. There was adequate opportunity for advance planning between the art director or production designer, a sympathetic and progressive director, and the director of photography. In both instances, actual set-construction was held to an absolute minimum, almost every bit of which ultimately reached the screen. Both pictures maintained a dramatically effective visual flow which was notably enhanced by this coordinated planning. And both, in spite of actually economical physical settings, reached the screen with an unusual amount of apparent "production value."

So can it not be concluded that if today's "rationing" of sets can bring to more of us a clearer appreciation of what this sort of planning can do to help us cut corners in production and build up production values in spite of these constructional restrictions, it might very well be turned into a lasting advantage—another step toward making better pictures, more efficiently?





Portable cinema giving a daylight show to Soviet soldiers close to the front. (Picture from Sovfoto.)

## TECHNICAL PROGRESS OF RUSSIA'S FILM INDUSTRY

By GREGORY L. IRSKY

Chief Engineer of Soviet Cinematography

**T**HE people of our country were always very friendly with the American people. It is quite natural that the Motion Picture Men of the Soviet Union should be among the most enthusiastic admirers of America, since the development of the motion picture industry in this country exceeds the accomplishments of any other country.

The motion picture men of the U.S.S.R., together with the rest of our people, are fighting for the defense of liberty and independence of their land, and for the liberty and independence of the people of the entire world.

However, that does not mean that the Soviet motion picture industry stopped functioning. On the contrary, our motion picture industry, which is greatly loved by the Russian people, has been successful in adjusting itself to the present war conditions, and goes on with its work.

A number of plants, studios and laboratories have been evacuated from the danger zones and re-established in new localities within two or three months. In this period of war we have already completed the building of a new film manufacturing plant and moved the entire equipment of an old plant to a safe place. During the war our motion pic-

ture studios have released fifteen new pictures, some of which have been shown in the United States.

Our renowned producers continue making pictures: Eisenstein is now shooting the film "Ivan the Terrible"; Ermler is working on the picture "The Heroic Defense of Moscow"; Iutkevitch is making "The Brave Soldier—Shveik"; Gerasimov, "Heroic Lenin-grad," and so on.

You can readily judge from these titles that the calmness and morale of the Russian people is at a high level.

The famous cameraman, Mr. Carmen, is taking part in air raids, dropping bombs on the heads of our enemies, and at the same time taking valuable motion pictures.

The cameraman, Gusev, has spent forty days with a guerilla detachment in the rear of the German lines. He has made excellent pictures and has set an example of heroism and devotion. During the war, the Russian cameramen have taken 400,000 feet of film at the front and have released 100 newsreels. In addition to this our studios have issued 150 shorts and 10 feature films on war subjects for the training of our army and civilians.

With your permission I shall now attempt to describe to you the progress of the Soviet Union motion picture industry.

Industry in its entirety is young in

the Soviet Union, but the motion picture industry is the youngest of all industrial branches.

We have not yet, indeed, reached the high standards of the American motion picture technique. But if we consider the accomplishments of the last ten years, the significant progress of this young industry will become evident.

With the rapid development of the sound motion picture, ten years ago, it became evident to us that satisfactory results could hardly be expected with what means we possessed at that time. Neither were our studios adapted for producing sound film, nor were the acoustics of our movie theatres adequate to meet the requirements of the sound movies. Furthermore our laboratories did not have the necessary developing and printing equipment so that most of this work was done by hand.

The difficulties in making sound pictures were further aggravated by the lack of enterprises to manufacture noiseless cameras, special types of microphones, amplifiers and sound-recording equipment. The distribution of the available sound pictures was limited by the shortage in the necessary projection apparatus.

We had only one plant producing raw film and this one could not guarantee the quality of its product since the technological processes used there were old and outdated. Furthermore the facilities of this plant were very inadequate to meet the demand for positive and negative films.

We also lacked the necessary experience and personnel. The average age of our motion picture engineers, at the present time, is between 24 and 30 years. Hence, ten years ago there were no people that could undertake the solution of the multitudinous problems involved in the new development.

For the elimination of these difficulties, time was required. As yet we have not licked them all. However, the work done has laid the foundation for a speedy development of our motion picture industry. Unfortunately, the war has to some extent impeded the conversion of a whole series of very vital and already finished experiments into practical use. But I emphasize "to some extent," since our motion picture industry as well as the entire industrial structure of the Soviet Union is rapidly overcoming the effects of destruction brought about by our enemy's temporary successes. Another major factor in overcoming our difficulties is the enthusiastic and self-sacrificing assistance that our people are giving us.

In the past ten years, we have built a number of factories in Moscow, Lenin-grad and other cities, for the manufacture of various kinds of motion picture equipment. Our inventors and designers have built a few new types of news-

\* From a paper presented at the Spring Convention of the Society of Motion Picture Engineers, Hollywood, May 4-8, 1942.



reel cameras. This line of cameras were manufactured by us in our factories, and the results proved to be most satisfactory under various operating conditions.

In 1940 our factories had manufactured the first types of noiseless sound cameras, which are very convenient to operate.

A few years ago our factories started to manufacture automatic developing machines, and as a result, most of our studios switched from hand developing to machine procedure.

More than eighty languages are spoken by the vast population in the Soviet Union. A great number do not understand the Russian language.

Yet our films must be accessible to the entire population; therefore, eighty percent of our pictures are re-recorded in an average number of 30 to 40 national languages by means of dubbing. The actors from various republics are invited to view the picture—then they repeat the words in their own language before the microphone.

Difficulties were encountered in this phase of our work as well, for it is not an easy task to control the timing element involved in combining synchronization of voice within the sound-track allotted. We have designed special equipment which controls the synchronization of the dubbed voice and action on the screen. We have gained great esteem in this branch of cinematography, and we are proud to have overcome the many obstacles in our way.

For the last few years, our factories have been making sound recording equipment designed by the Russian Professor A. Shorin and P. Tager. Four years ago, simultaneously, we started to manufacture the RCA sound-recording systems.

The domestic supply of movie equipment and films is insufficient in quantity to meet the demand, so that in addition to the foreign purchases of equipment, most of it coming from the United States, we are endeavoring to increase our own production.

Our movie industry setup is quite different from what you have over here with the concentration of the majority of studios in Hollywood. Under the Soviet Union conditions, where great attention is being paid to the cultural requirements of the various nationalities of our land, we must have separate studios in all national republics which make up the U.S.S.R. Most of these sixteen republics already have such studios. The servicing of these studios, spread over great distances, is naturally difficult. This, however, does not interfere with their development. On the contrary, due to communication difficulties they have become more independent. At the same time the experiences of each studio is shared by all.

In 1938 we started to produce the RCA equipment PM-38 and to date a few dozen units have been made. We had some difficulties with the RCA mirror galvanometers, which were also experienced previously in the Hollywood

studios. In order to eliminate these difficulties a noise-reduction, bilateral shutter is being substituted for the three-angle mask, and to improve the speech recording, which came out previously with considerable amplitude distortion, a compressor was put into use.

To obtain greater amplified stability in sound-recording and reproduction, as well as to improve the frequency-response, interference and distortion, we are using, to a great extent, the principle of feed-back amplification.

We are not satisfied altogether, as yet, with the quality of our sound recordings. The reasons for this are to be found in the low standard of our sound-recording films and in the shortcomings of the galvanometers, essentially in their amplitude characteristics.

Recently we have paid considerable attention to the problems of re-recording and have achieved the establishment of multi-channel recording.

As a result of the experimental work in the studios of "Detfilm" there has been considerable improvement in the electro-acoustical characteristics of the sound-recording channel.

We have begun the production of new microphones, but the quantities are yet insufficient to meet the demand.

A limited amount of testing and measuring equipment produced by us has enabled us to standardize our sound-recording procedures and controls.

The effect of improvements made can readily be seen in the following pictures: "Moscow Laughs," "Circus," "A Musical Story" and "Anton Ivanovitch."

The quality of the raw film is very essential in determining the final sound and picture quality. As I mentioned before, we have had one old plant for manufacturing raw films. While we were successful in obtaining satisfactory results under semi-laboratory conditions with a limited supply for a good quality film, the same could not apply after we went into mass production of film-stock. However, before mass production of film could be started, considerable research work had to be done for the development of new technological processes. A number of very interesting processes have been developed. For example, new methods of ripening and washing the emulsions, drying the film, making multi-layer emulsions, etc.

These new processes were not applied as yet under production conditions, but we intend to do this in the new plant recently built. This new plant was completed during the war, and is now producing film for civilian consumption as well as for the army. After the war we plan to produce film in sufficient quantities to cover our demands.

The improvement of the printing and developing procedures could not have been made while they were done by hand. The introduction of automatic mechanical equipment resulted in some improvement and we hope to still further improve this situation in the very near future.

We have already taken steps in this direction. A year ago we had made the first line of printing machines, and finished a machine for non-slip sound-track printing based upon RCA specifications. We have developed standard procedures for printing and developing and have produced some types of control and test equipment. The production quantity of this equipment is far from meeting our demands so that we have had to purchase and consider purchasing more printing machines in the United States.

Last year we were trying to improve the developing process and now have completed some experimental work on the turbulence of the developing solution. We hope that the work being done will enable us, in the near future, to improve the technique of printing and developing.

Up to recently our color films were limited to the two-color process. We have well-equipped laboratories at the Moscow and Kiev studios for two-color films. Some of our color productions, as for instance, "Grunia Kornakova," "The Fair of Sorochino" and others have been very well received.

In view of the fact that the two-color films made it impossible to utilize fully the potentialities of color, a few years ago we started experiments with three-color movies. The main work in this connection is carried on by the studios of "Lenfilm," "Mosfilm" and the Scientific Research Institute.

Due to lack of experience, we have encountered a number of difficulties, especially in carrying over the experimental work from the laboratory to the studio. We are working on several methods in order to find the best one.

The best results were obtained with a special camera using three-color films. Eighty percent of our cartoons are made in color and we believe that the color cartoon is the first step in the further development of color movies.

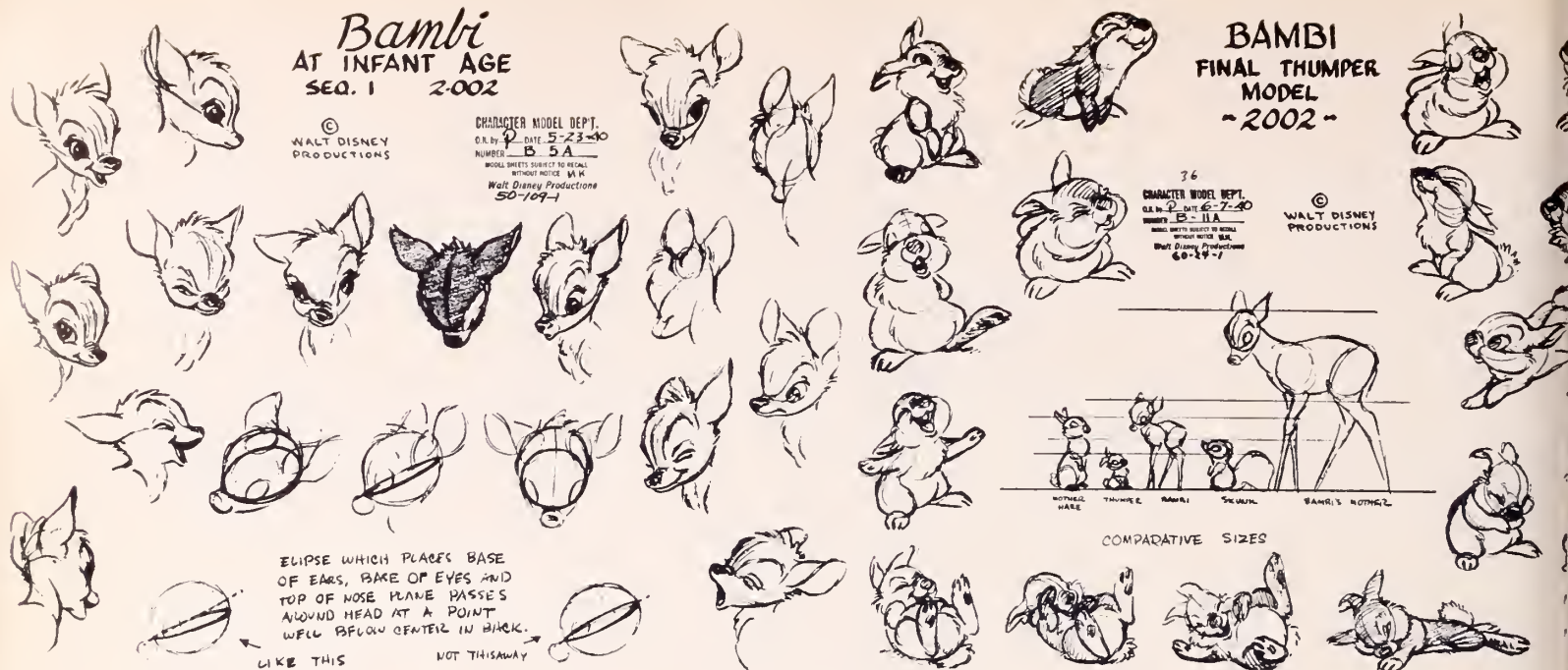
It is our opinion from the limited experience gained in the production of color films, in spite of satisfactory results obtained by using three films, this method will not be acceptable on account of the bulky camera and complex printing and developing involved.

We believe that real progress in color movies will be attained only after means are devised whereby color films will be taken with a standard camera, using a single film, and after developing and printing procedures are simplified. This is easier said than done. We very well realize all the difficulties that will be encountered. In this connection we shall find it necessary to devise new methods for developing and printing color films and to rebuild some departments of the film manufacturing factories. We will have to solve our technical problems more rapidly than previously, because our people like the movies.

For the speedy solution of these problems we hope to obtain the assistance of some American concerns and special-

(Continued on Page 285)





# Animated Cartoon Production Today

## Part III – Animation

By CARL FALLBERG

THE problem of bringing a character to life by animation is a curious mixture of artistic and technical considerations. Both these factors are interrelated. The animator can't devote himself entirely to the artistic side without considering various technical factors that govern the screen presentation of the scene.

Animation is as much a knack as it is an art. An animator must be a good artist, but it doesn't follow that every good artist has what it takes to be an animator. The requirements of animation demand, besides drawing ability, a certain feeling for analyzing and portraying action, a good appreciation of story-values, a feeling for the fundamentals of pantomime, and a willingness to compromise artistic freedom to exacting technicalities.

The term "animation" is sometimes loosely applied to the entire cartoon industry, but its correct usage implies the actual, specialized work of the animator. For those who insist on definitions, animation is, specifically, the art of creating a series of drawings which, when photographed in a certain sequence and projected upon a motion picture screen, present the illusion of motion.

There's no great mystery about animation. It's based on a few simple, fundamental principles that are analogous to all phases of the process. The technique of animation, however, undergoes a constant series of changes and improvements. This technique is something that's more closely associated with the individual abilities of animators than

with any set of technical principles. Improvements in animation come through the animator finding, by trial and experience, better ways to make his characters live.

Many factors are concerned—draftsmanship, better coordination of action and timing, subtler characterizations, and more and more realism of movement. A parallel can be drawn between animation and the technique of the actor, for it's the animator who gives a cartoon character the actual screen performance. Whether the animator's drawings become simply moving drawings or whether they express the feeling of a living, convincing personality is entirely up to his knowledge of animation mechanics and timing combined with his feeling for pantomime and his appreciation of dramatic values.

It's hard work, and terrifically exacting, but it has an appeal that no other endeavor in the field of art can hope to equal. Animators will grumble about the scenes they're given to animate, complain about the confinement of the business, they'll say the work is hard on the eyes, gives them stoop-shoulders, is rough on the nerves, etc., but pin them down and they'll have to admit they like it—"Something fascinating about the damn stuff!"

The theory of animation is nothing new. Even the old Egyptians fooled around with moving drawings. Between the pillars of a certain temple in Egypt

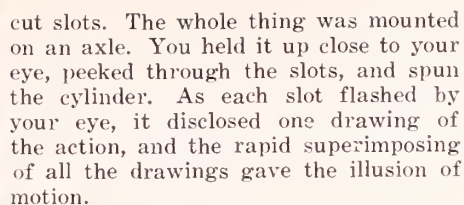
are arranged drawings of a man's figure in various stages of a salute. Exactly what that antediluvian animator of the Nile had in mind when he designed those drawings isn't clear, but the generally accepted story is that the figure represented a God, and when the Pharaoh galloped past in his chariot, he could look toward the temple and with the closely spaced pillars acting like a shutter, apparently see his God lift his hand in salute or blessing.

This primitive attempt at animation has no bearing on modern cartoon technique, but it indicates that attempts to analyze motion go a long way back in history and that the problem has always fascinated artists. Experiments along this line reached a fine peak of perfection in the photographic work of Eadweard Muybridge. Motion picture film hadn't been invented at the time of Muybridge's experiments, (1870) but it is doubted if the 16-frame a second exposure of the silent motion picture camera could have equalled the remarkable sharpness and clarity of his photographs.

Tangible efforts to create motion by a series of drawings pre-date the invention of motion pictures by many years. The Zoetrope, a toy which confounded and amused the kiddies and grownups of the middle 19th century, was an animated cartoon in a crude form. This gadget was simple enough—just a paper cylinder, on the inside of which was a series of drawings illustrating successive poses of a human or animal in action. Into the side of the cylinder were

Above are seen two "model sheets," which guide animators in keeping the drawing of cartoon characters constant.





The same phenomenon that made the drawings of the Zoetrope move is also responsible for the movement of the animated cartoon, in fact, of all motion pictures—a peculiarity of the human eye known as “persistence of vision.” This simply means that the retina of the eye retains an impression of whatever acts upon it for 1/30 to 1/50th of a second after the original impression is gone. When a succession of still pictures (as in motion picture film) is flashed on the retina, the rapid overlapping of retinal impressions due to persistence of vision results in the illusion of seeing motion on the screen.

The first person to think of hooking together the two elements, motion picture film and animated drawings was the late J. Stuart Blackton, back about 1908. However, Blackton's experiments were little more than glorified chalk-talks, and bore no resemblance, save in fundamental principle, to modern cartoons. It remained for Winsor McCay, in 1911, with his "Gertie the Dinosaur," to start the ball rolling in the direction of present-day animated cartoon technique.

McKay's method of working differed from modern procedure in that he redrew each complete set-up—character and background—over and over again for each frame of film instead of drawing the character on a sheet of celluloid

and superimposing it over a single drawing of the background. The idea of tracing the characters onto celluloid was to pop into the head of Earl Hurd, another cartoon pioneer, a couple of years later.

So, as can be seen, McCay did it the hard way. However, he was blazing a trail into hitherto unknown cinematic territory, and the ordinary problems of animation mechanics and timing, which are second nature to the animator of today, were probably a bigger headache to McCay than the actual drawing of Gertie herself.

But it wasn't long after Earl Hurd hit upon the celluloid process that animated cartoon technique got into the swing of a standardized, simple production procedure and from then on it was simply a matter of detail improvements in technique. So today, Gertie's multitudinous offspring cavort about the screen with complete freedom, unhampered by any technical problems—at least so far as the audience can see.

The problem of animated cartoons today is to keep on developing fresh material and new slants, in order to avoid self-strangulation due to ingrown ideas.

The same problem of "new ways of doing things" holds true in the case of each individual animator, who must con-

Left, these six key "roughs" drawn by the animator are the guide for "inbetweening" 1 foot 12 frames of action. At right is shown an exposure sheet outlining animation of scene from "Bambi" illustrated last month.

stantly be on the alert for ways to improve his technique in order to ward off creative stagnation. And it's usually nobody's fault but his own if he doesn't keep improving, particularly in a studio like Walt Disney's, where such progress is the keynote of production.

The animation of a cartoon is handled just as the shooting of a live-action picture, scene by scene, and not necessarily in sequence. Each scene is timed out for its screen footage before production, just the reverse of the procedure in live-action. This way of working generally makes for more control over all the elements of the picture, and provides a reasonably definite course for the animator to follow. Naturally, changes in timing which will shorten or lengthen scenes, may yet occur as the animator works out his action.

PROD	SEQUENCE	SCENE	FOOTAGE	ANIMATOR	CHARACTER	CREDIT	PICKUP DATE	UNIT CHECKER	UNIT
2002	2.1	53.00	14.15	KAHL	Bambi Bunnies		DEADLINE		1
COORDINATOR	CHARACTER	COORDINATOR	CHARACTER	EFF. ANIMATOR	CHARACTER	EFF. ANIMATOR	CHARACTER	UNIT CHECKER	CHARACTER
				UNIT CHECKER				UNIT CHECKER	
FOOTAGE	CREDIT	DEADLINE	FOOTAGE	CREDIT	DEADLINE	FOOTAGE	CREDIT	DEADLINE	FOOTAGE

MED. SHOT - Bambi backs away from log three or four steps & gets into cute little crouch position, expressing his determination and then runs for log and makes a mighty leap. Bunnies who have been sitting on top of log scatter as Bambi approaches log. Bambi comes down on top of log as bunnies scatter out of scene. Cut.

### SPECIAL CAMERA INSTRUCTIONS

[illegible]



# TRAINING FILMS IN THE U. S. NAVY

By LIEUTENANT WILLIAM EXTON, JR., U.S.N.\*

**T**HERE are four things necessary for victory in war, with respect to the armed forces. These four things are: 1. Numbers of men. 2. Equipment. 3. Training and 4. Spirit or morale. If you have enough men, enough equipment, if the men are sufficiently well-trained and if they have the right spirit, you will win. It is the Navy's job to build up its personnel to a sufficient number of adequately trained men of high morale. These men—manning the two-ocean Navy now built and building—can do for the United States what the Navy has always done—protect our shores by defeating the enemy.

There is no doubt that motion pictures have an important part to play in this program. So far as the Navy is concerned, motion pictures are of great assistance in the recruiting program, and undoubtedly help to maintain the Navy as a volunteer organization. Some of you may perhaps not realize that our Navy has never been manned by any other than volunteers. We are proud of that record; and the help that motion pictures give in recruiting assists us in maintaining today that unblemished record dating back to John Paul Jones.

With respect to equipment: equipment, after all, is the product of industry. It is made by men and machines, and is paid for by money. We know that motion pictures assist in raising the money by stimulating the sales of defense bonds and savings stamps. And we know that the motion pictures are used in many places to train workers. Many manufacturers of machinery have caused to be produced motion picture training films explaining the use of such equipment. Many industrial organizations employ motion pictures to help stimulate production.

The third of the necessities I have mentioned, however, is the principal subject of this present discussion, and that is the contribution of the motion picture film to Navy training. I need not remind you that modern warfare is technological warfare. It is men and machines against men and machines. Modern weapons and modern defensive equipment are constantly becoming more complicated. Before the days of firearms, men fought hand-to-hand, and there was little room for mechanical

complication in the wielding of swords and pikes and spears and other such primitive instruments of warfare. The use of these weapons could be learned only through long years of practice. The man who was experienced with one of these weapons was a professional soldier—a mercenary—and a few such men could put to rout many times their number of unskilled and inexperienced peasantry or burghers who were not accustomed to fighting in this manner.

With the introduction of gunpowder, there was a tendency to equalize the human beings participating in combat, since a prominent noble dressed in the most expensive suit of armor might easily fall victim to the bullet of a common soldier. Castles which had stood dozens of sieges over hundreds of years, and which were the impregnable homes of prominent lords and monarchs, now fell before booming artillery pieces. But as wars progressed and cannon opposed cannon, complications were introduced to improve the effectiveness of the opposing pieces; and thus the handling of these weapons gradually grew beyond the skill of the average untrained man.

In the early days of our Navy, the range of battle was virtually point blank, and it took no tremendous skill to aim a gun. The principal skill in battle was that of the commanding officer, who, by maneuvering his ship, brought the other ship within range and exposed it to the deadliest concentration of fire. Today huge shells are sent crashing beyond the horizon, and the swift dive-bomber or high-altitude bomber is prepared to drop its deadly missiles within a few seconds after first being sighted. Under circumstances like these, the humblest sailor must—if he is to justify his place aboard a modern vessel of war—be extremely skilled in some useful battle duty. Whether he mans a gun or whether in some high spot he spots and helps to control the fire—whether down in the engine room he helps to deliver the essential speed and power—whether he ministers to the wounded, handles the communications, or takes care of the ammunition supply—whatever his battle station, he must perform it with the utmost efficiency, since the sum and total result of the efficiencies of all the participants in battle is the efficiency of the vessel. Nothing less than maximum efficiency can be justified in battle, and such efficiency cannot be attained when

the personnel is not trained to do its utmost.

However, a modern ship of war, and even a modern warplane, spends a very small fraction of its life actually in battle. In fact it spends a minor fraction of its time even preparing specifically by practice for battle. A large part of the time is spent in maintenance, and in the pursuits that sustain the life and health of the members of the complement of the ship. The members of the gun-crew, for instance, spend far more time at maintaining the guns and seeing to it that the equipment is in perfect condition, than they do in firing it. All machinery must be maintained and all the intricate equipment for the control and spotting of gunfire, for communication, for detection of aircraft and undersea vessels, and for navigation, must be maintained.

In times of peace, a new recruit was sent to a training station for several months of preparation for duty at sea. He was then placed aboard a ship, where the petty officers above him as well as his commissioned officers would have plenty of time to whip him into shape. He would learn from others by doing, and his drag upon the efficiency of the vessel was not of very great importance. In times of war, however, such as the present, a vessel newly commissioned, and taking aboard a crew which has never worked together before, may find itself in contact with the enemy in a matter of days. Obviously a wholly green and untrained crew cannot be allowed to go forth in a war vessel, and yet with naval personnel expanded as it has been, many-fold in a very brief length of time, the problem of securing trained personnel—or of training personnel as secured—is a tremendous one. As the number of war vessels in commission increases, the experienced skilled personnel is diluted—being scattered among the large number of vessels. As more and more ships are required for active duty at sea, fewer of them become available for training purposes.

Thus, though personnel is being expanded beyond all precedent, and the need for training was never greater, there is a smaller number of skilled personnel available to conduct training, and there is less equipment available for use in training. Further to complicate the situation, in a war like the present, there is an astounding development of new techniques, of new procedures, new inventions and developments, which require the training of thousands and thousands of men in the use of instruments about which at first perhaps only a very few experts have knowledge.

The training problems created by these situations are tremendous; and in their solution, visual aids are expected to play and are already playing a very important part. I might observe here that one of the most important characteristics that is desired in naval training is standardization. Men who are graduates of the United States Naval

\* From a paper presented at the Spring, 1942, Convention of the Society of Motion Picture Engineers.

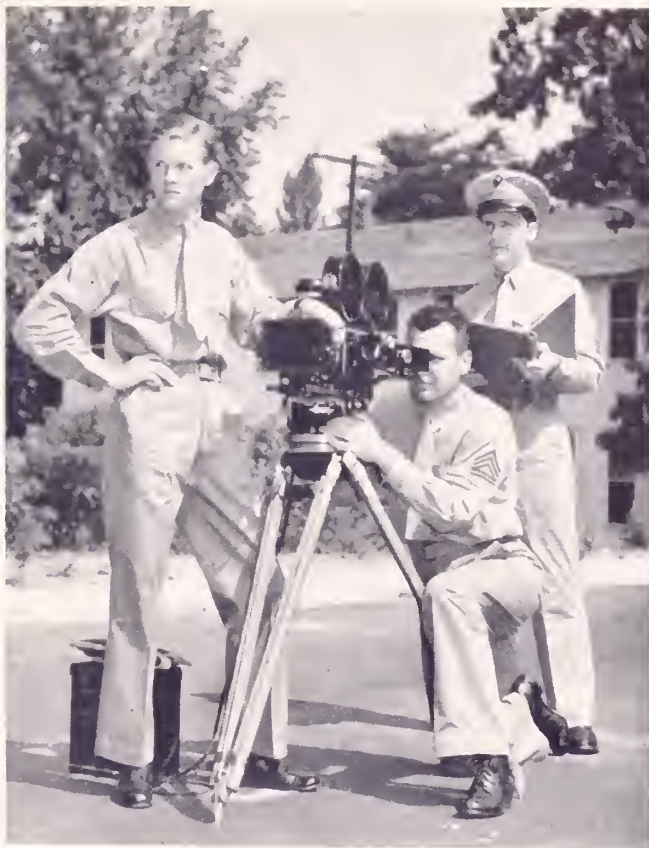


Academy have received standardized training, and thus an officer aboard one American war vessel can generally predict what an officer aboard another American vessel will do under a given set of circumstances. This standardization of training is of great value. Its value extends down into the field of the skilled enlisted men, since the interchangeability of men is of importance to the efficiency of the fleet; and a man who has learned to do a thing a certain way on one ship and is expected to do it another way upon another ship will not be giving to the Navy the fullest benefit of his experience. If men are taught by other men, there is always the tendency away from standardization, since each individual has his own idea of what should be stressed and how things should be done. However persistently the Navy itself may foster standardization, there is a trend away from standards where teaching is done by individuals.

Audio-visual aids, however, help to standardize. Since they can be used throughout the Naval service and since they will appear identically to all who see them, they have the most helpful effect in standardizing training. Furthermore—and this is extremely important—audio-visual aids can standardize training on a high level rather than on an average level. It cannot be denied that there are good teachers and bad teachers. Some men are skillful in training others, and some men are not quite so skillful in training others. If audio-visual aids to training are prepared by the best available experts, and are properly developed to have maximum value for training purposes, then training through them can be standardized on a very high level. It is hoped that as the use of audio-visual aids in the Navy develops, this will be increasingly true; and the Bureau of Navigation is extremely desirous of setting and maintaining a high standard for the visual aids produced for use in Naval training.

I would like to stress the point that visual aids to training are not entertainment. They are not intended to be entertainment, and they should not be considered as in any way related to entertainment. The mere fact that an audio-visual aid may be a motion picture should not cause it to be confused with motion pictures produced for entertainment purposes. The motion picture is a use of a photographic technique which can serve many purposes. The fact that it has served the purpose of entertainment so greatly should not influence—or better, say, should not impair its use for training purposes.

There is a tendency on the part of some of those who attempt to produce films for training purposes to make these films approximate films for entertainment. They introduce the films with music, and they have music arising many times during the course of the film; and furthermore they introduce elements of incidental comedy, and in



Many Navy training films are made by service camera units like this Marine Corps camera crew.

other ways they try to make the film—as they would say—"palatable."

This is a gross abuse of the principle of the training film. A training film should be regarded as a textbook. It should be easy to understand, it should be clear, it should be simple, it should introduce no unnecessary complications; but there is no obligation on the part of a textbook to be amusing or ingratiating. Furthermore, the proper use of a training film will usually involve its being repeated. Most of the training films that I have seen can best be used by showing them a number of times—perhaps giving the men an opportunity to ask questions or to be lectured to between the showings.

A fairly complicated film, which gives the men only a rough idea of the subject the first time it is shown, may be very simple and easy to understand after it has been shown several times, and all the questions have been answered, and the subject has been explained. A film which is well conceived and executed will be just as interesting the fourth or fifth time it is shown as the first time, and a new instructional benefit will accrue from each showing; but a film which is made to be entertaining is very likely to look extremely silly the second time it is shown—and it thus defeats its purpose.

Those of you whose experiences have been primarily in the field of making films for entertainment should bear this very much in mind if you venture into the field of training films. No doubt many of you will, as this medium achieves greater and greater use in civilian as well as in naval and military training activities.

The Bureau of Navigation has a Training Division. This Division has cognizance over all training of Naval personnel, officers and men. We conduct an extraordinarily large number and diversity of training activities. We run the Training Stations to which the newest recruits are brought for their first experience with the Navy after the Recruiting Station. We run the various schools where enlisted men are taught the trades which make them experts in a very large number of fields. We train the Navy's officers at the U. S. Naval Academy at Annapolis and at the Naval Reserve Officers Training Corps Units in the many universities, and at the Reserve Midshipmen Schools. We conduct the Postgraduate School, and the Naval War College, at which the higher officers receive advanced training. We conduct schools that teach about Diesel engines, and underwater sound, and radio material, and torpedoes, and submarines, and gunnery and all the other specialties that modern Naval warfare involves.

It is a part of the task of the Bureau of Navigation to find for these many activities the audio-visual aids which will help the officers commanding these schools, and their staffs, to do their jobs as well as possible. The audio-visual aids sent to these many activities come from a great diversity of sources.

Officially, the agency for the procurement of photography in the United States Navy is vested in the Bureau of Aeronautics; and if the Bureau of Navigation wishes to procure a film to send to a naval activity, we request the Bu-

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# Choosing Film Materials For Professional 16mm Production

By JAMES A. LARSEN, JR.



With proper development, direct 16mm. negative-positive like this is thoroughly practical for commercial production.

THE 16mm. producer has a greater variety of film materials with which to work than does the 35mm. producer. In 16mm., black-and-white production can be done in either the negative-positive system familiar in 35mm. practice, or in the reversal-original-dupe-negative-positive system. In 16mm. color, reversal-type Kodachrome is of course used, with full-color release-prints made by contact printing onto a special Kodachrome duplicating stock. Where desired, either for economy or because of the inherently fine grain-quality of Kodachrome's dye-image, black-and-white reversal duplicates or dupe negatives can be printed from a Kodachrome original, and in instances where 35mm. prints are needed, monochrome or color enlargements from a 16mm. Kodachrome original are already being used commercially.

The choice of film materials for 16mm. production depends on quite a number of factors including, in addition to the familiar one of emulsion characteristics, such considerations as the uses to which the production is to be put, the type of equipment and handling the release-prints are likely to receive, and so on.

For the type of production for which negative film is best, several emulsions are available in 16mm. film. Eastman Kodak makes a slow, fine-grain emulsion called Cine-Kodak Panchromatic Negative film which is excellent for exterior shooting, but too slow for interiors. This film has about the same characteristics as Background-X in 35mm. Their Super-XX Panchromatic negative is much faster and gives excellent results on interiors. It has satisfactory grain characteristics if properly exposed and developed. Eastman will also supply the familiar Plus-X emulsion in 16mm. on special orders if a full coating (about 20,000 feet) is ordered at one time.

Agfa Supreme 16mm. negative is slightly slower and somewhat finer in grain than Eastman Kodak Super-XX, and is suitable for either interiors or exteriors. Agfa also makes a 16mm. Infra-Red negative emulsion for effect-shots and night-effects.

Dupont's "Superior" negative is available in 16mm. in two types. Very similar to the moderate-speed 35mm. "Superior 1" is the 16mm. "Superior Type 314," which is an excellent film for exterior shooting. Comparable to the faster

"Superior 2" in 35mm. is the 16mm. "Superior Type 301," which is an excellent emulsion for most normal interior and "production" camerawork. At present, DuPont's super-speed 16mm. product (Type 302) is available only as a negative material, though the other two types mentioned may be used as either negative or reversal films. The grain characteristics, contrast and latitude of these DuPont films are exceptionally good and there is the added advantage that DuPont maintains their own laboratory for processing their film as a negative, and for making contact prints.

As mentioned in the discussion of frame-line shift due to film shrinkage, it is always best to use film of the same manufacturer, of the same age and from the same batch or emulsion number for a particular production if possible. For professional results, it is not advisable to shoot part of a production on DuPont and another part on Eastman or Agfa film. If the producer will choose the film which best suits his requirements and sticks to it, he will get more consistently good results. And even when using one emulsion, it is advisable to attempt to get film all of the same batch or the same emulsion number.

For the type of production in which reversal film is best, there is less choice of emulsion than there is in negative emulsion. Eastman Kodak makes three reversal films; Super-XX, Super-X, and Cine Kodak Safety Reversal film. Super-XX Reversal is similar in properties to Super-XX negative film. Super-X Reversal is slower, finer grain and comparable to Plus-X in 35mm. Cine Kodak Safety Reversal film is an extremely fine-grain and photographically slow emulsion which is excellent for exteriors but too slow for interiors. This emulsion is used extensively for making reversal sound-tracks and for printing black-and-white work-prints from Reversal or Kodachrome originals. It is panchromatic and gives good black-and-white reproductions from color originals.

Agfa Triple-S Superpan Reversal Film is a very good reversal emulsion for interior shooting but is so fast that a neutral density filter is almost a necessity for exterior shooting. Agfa also makes a slow reversal emulsion comparable to the Cine Kodak Safety reversal film.

As mentioned in the discussion of nega-

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**U**NCLE Sam needs cinematographers for active service on all the far-flung battle-lines upon which American troops are fighting this war—and Hollywood's top cinetechanical experts are joining forces to train them! United in this ambitious project planned to transform hundreds of amateur and semi-professional cinematographers and still photographers into trained army cameramen are the Research Council of the Academy of Motion Picture Arts and Sciences, the American Society of Cinematographers, the International Photographers Local 659 of the I.A.T.S.E., and the technical experts of the major film-manufacturing companies.

The course will consist of six weeks of intensive practical instruction, largely in night classes in various major studios, but culminating in daytime sessions of actual field work under the guidance of the industry's outstanding exterior specialists. Students who successfully complete the course will be assigned to active service as members of the Signal Corps' Photographic Section.

The first class will start its instruction June 1st, and new classes will be formed weekly thereafter. Enrollment is open to American citizens from 20 to 45 years of age who, if accepted for training, enlist for Field Service in the Army's Signal Corps Reserve. The course is open not only to studio workers with previous photographic experience as professionals or amateurs, but to seriously interested amateur and semi-professional cinematographers and still photographers as well. No fees or tuition expenses are involved, but some basic knowledge of photography and a sincere interest in picture-making are requisite.

Each of the three organizations involved has its definite part to play. The Research Council, due to the close contacts already established with the Signal Corps through the production of many Army Training Films, is to serve as the coordinating agency and to provide liaison with the Army. The American Society of Cinematographers is to have charge of instruction in cinematography, and members of the A.S.C., including many who saw active service in the last war as Army or Navy cinematographers, will serve as instructors. Top-flight operative and assistant cameramen and film-loaders, members of Local 659 I.A.T.S.E., will provide instruction in camera operation and maintenance, and other members of the same organization will give instruction in a similar course in still photography. Experts from the Hollywood technical staffs of the Eastman and DuPont film organizations will instruct in basic photographic technology.

Chairman of the committee in charge of the cinematography training school is Fred W. Jackman, President of the A.S.C. Serving with him on this committee are Emery Huse, A.S.C., Hollywood Technical Representative of the Eastman Kodak Company's Motion Picture Film Department and President of the Society of Motion Picture Engineers, Hollis F.



## A.S.C. and Academy to Train Cameramen for Army Service

Moyse, A.S.C., DuPont's cinetechanical expert, and C. Roy Hunter, Camera Chief at the Paramount Studio. The active instructional staff has not as yet been completely named, but it will include some of the industry's foremost cinematographers, experts particularly in difficult location and field camerawork. Due to the exigencies of production, it is probable that there will be some rotation of instructors.

Speaking about this training plan, Chairman Jackman says, "This is the first time in its twenty-three years of existence that the A.S.C. has lent its approval—much less its active support—to anything resembling a course in cinematography. It does so now because the increasing importance of cinematography as an adjunct to modern "all-out" warfare has created a demand for trained manpower utterly beyond the capacity of the professional industry to provide.

"Today, a motion picture section is an integral part of every military unit in the field, and with our rapidly-growing Army engaged on almost every continent, cinematographers by the hundreds are needed. When you add to this demand by the Signal Corps the parallel needs of the Air Force, the Navy and the Marine Corps and other branches having their own cinematographic sections, you reach an immediate total greater than the entire number of pro-

fessional cinematographers in the country.

"Fortunately, this country has a great and untapped reserve of capable cinematographic talent among the amateurs and semi-professionals—men who though they may not have made a career out of photography, have yet attained great skill with their 16mm. and 8mm. cameras making films for pleasure, and often for industrial and educational purposes as well. They require only a minimum of training to enable them to serve their country excellently in the field with 35mm. equipment.

"We are determined that the training they receive shall be of the best, and that it shall avoid the many mistakes that were made in similar training projects during the last war.

"None of us are so optimistic as to imagine that six brief weeks of instruction—even by the world's greatest experts—can take the place of the years of practical experience which alone makes a trained studio cinematographer. But by eliminating all non-essentials, and concentrating on strictly practical essentials under the tutelage of the industry's outstanding specialists in this type of work, we are confident that we can train men who already have a good grounding in practical amateur or semi-professional cinematography into camera-carrying soldiers who can be de-

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## Aces of the Camera

### XVIII:

## Farciot Edouart, A.S.C.

By WALTER BLANCHARD

**T**HE men who do Hollywood's special-process photography seldom have a chance to bask in the lime-light of publicity. You see their names on the credit-titles of pictures, lurking behind some cryptic notation like, "Special Photographic Effects by So-and-So," but unless you're right in the industry, you don't get much of a chance to find out what they do, and still less to learn

what they look like, or what sort of people they really are. Yet among them are some of the greatest aces of the cinema—and without their unheralded contributions, many a modern production could never have been made.

A typical example is Farciot Edouart, A.S.C. Officially, he's the Head of the Transparency Department at the Paramount Studio—which means that he's

one of the industry's top-ranking specialists in the projected-background process, with a record of twenty-one years of specialization in "trick" and special-effects camerawork behind him, all of it with Paramount or its several corporate forerunners. As a matter of fact, throughout his twenty-seven year career in the industry, he has never worked for any other organization than Paramount except for the period he worked for Uncle Sam as a cinematographer during the last war. Then, he went in as a buck private—and emerged with a major's commission!

Farciot was born in California, where his grandfather was a portrait photographer, and his father a portraitist, as well. Around the turn of the century, the junior Edouart came to Los Angeles, where he established a branch of the family's fashionable portrait studio during one of Southern California's early "boom" periods. When this boom collapsed, Edouart closed his studio and entered commercial photography, first for the Gas Company, and later in the office of the County Assessor—a position which he held until very recent years. Meantime, he kept a studio and darkroom in his home, and continued with his portrait work on the side.

Small wonder it is, then, that young Farciot absorbed photography all through his childhood and youth; as he puts it, he was weaned on developer.

And it is no wonder, either, that when the time came to select a job, he should choose the most modern form of photography—the cinema. In 1915 he went to work at his first job—as an Assistant Cameraman in the Realart Studio in Hollywood, a subsidiary of one of the firms which finally became today's Paramount.

During the succeeding two years, he worked his way up the cinematographic line until America entered the war. Then he enlisted, placing his specialized knowledge of photography as it related to color, color-rendition and filtering (of which he had made a special study) at the disposal of the Camouflage Division of the Army Engineers. Examined for a commission in this service, he passed highest among a group of sixty specialized experts, and with his commission assured, boarded the train for Washington.

And while he was on that train, his official papers also enroute by rail (as there was no air mail in 1917), a departmental reorganization took place in Washington. All of the Army's photographic work was centralized in the Signal Corps—and when Edouart arrived in Washington, he found himself without rank, as military red tape prevented his transferring to the Signal Corps with the rank he had been promised by the engineers!

So he enlisted in the Signal Corps as a buck private, and was sent to the Signal Corps' famous school of cinematography at Columbia University. Eleven weeks later he completed the

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# THROUGH the EDITOR'S FINDER

WHETHER it's the result of influence or mere coincidence, it's always gratifying to an Editor to see some suggestion he has advanced turned into actuality. When we wrote last month's editorial, suggesting that since the Army and other services were in need of cinematographers, quickly, and in greater quantity than the professional industry could supply, they'd find a vast supply among the nation's 16mm. amateurs, we didn't know that anything like the present A.S.C.—Academy Training Plan for Signal Corps cinematographers was in the wind. We don't presume to take credit for it—but they're doing precisely what we suggested, only, we believe, doing it even better than we could have suggested.

So we make bold to offer another suggestion along similar lines. We wonder if some way could not be found to transfer capable amateurs and 16mm. professionals who are already in the service, either by enlistment or draft, into the Signal Corps where with this present training, their previous experience could be put to useful work? Some of them are in various branches of the Army and Air Forces; others in the Navy and Marine Corps. Couldn't some provision be made to transfer them to the photographic branches of their respective services, and send them through the training course so that the years they're spent behind movie cameras could pay the Government a profit? After all, the best of cinematographic training only polishes an instinct for cinematography which has to be born in one; and experience has shown that you can no more make a photographer out of a non-photographer than you can make a combat pilot out of a man who has no aptitude for flying.

Obviously, there must be plenty of military technicalities in the way of effecting such transfers—but in the interests of efficiency in this admitted emergency, wouldn't it be worth while to see if it couldn't be done?

AMERICA'S amateur movie-makers have a very great deal to be thankful for at any time, but now especially. During the decades of peace in which movie-making has grown to the status of a top-ranking hobby for millions, we've been free to train our cameras on anything that pleased our fancy. Even in active military posts, we've been amazingly free to use our cameras as we chose, and elsewhere—among the railroads, airports, harbor-works, and innumerable places which in other countries have long been strictly-guarded military secrets, American cine-amateurs have been free to use their cameras as they wished, so long as they didn't act foolishly and get hurt. No secret police have trailed us—no bigoted

governmental censors have confiscated our cherished reels. Even when we have trespassed on private property—such as privately policed railroad-yards, and the like—the majority of officials have winked at us, and merely said, "Don't get hurt, Buddy," instead of dragging us off to jail, as they had perfect right to do.

Today—even in wartime—we've amazing freedom to take pictures, so long as we don't train our lenses at things vital to the Nation's War Effort.

Nowhere else in the world, in either war or peace, does the photographic amateur enjoy such freedom to follow his hobby. It's part of the American Way of Life, of course—but it's a privilege nowhere else enjoyed . . . one of the American liberties we take for granted, yet which would amaze people of many other countries.

It seems to this writer that this is a privilege which is worth much more than mere lip-service. Many of our camerists, professional and amateur, are already in uniform, fighting to preserve this and the other liberties under which we live. Those of us who remain at home can do our part, too. And since this very special privilege is so intimately connected with our hobby of picture-making, why can't we tie it in closely with that hobby?

Why can't we, as our way of saying a tangible "thank you" for the freedom our cameras have been accorded, make it a policy to set aside a definite sum every time we buy a roll of film, and invest it in War Savings Stamps?—Suppose, for instance, a nominal figure like 10 per cent of the cost of the film; if you shoot Kodachrome in 8mm., for example, it would mean buying 30 or 40 cents worth of stamps for each roll of film; if you shoot 16mm., you'd buy from 50 to 90 cents worth, depending on the type of camera you use.

In itself, this wouldn't be much—hardly more than the price of a couple of packs of cigarettes or a highball or so. But in the aggregate—multiplied by the tremendous number of rolls of film America's cineamateurs shoot each year—it would form a really worthwhile contribution to the War Effort. How about it?

EVERY so often we hear that this foreign nation or that one has made threatening gestures toward Hollywood because they felt one of their nationals had been held up to ridicule in some Hollywood-made movie. Many of these protests, we realize, are based on too great a national pride, and perhaps upon a lack of understanding of Yankee humor. But sometimes we can sympathize with these "good neighbors" who feel Hollywood has made them foolish by using a comedy character from their land. Every so often, we see in a movie

a cameraman—maybe a cinematographer, maybe just a still photographer. And we can't ever remember a time when one of these characters has been played "straight." Always, the man at the camera is put there for a laugh: maybe he's a fluttery, la-di-da portrait artist; maybe he's a hard-boiled ape of a movie "lenser;" sometimes—as in one recent picture—he's a bibulous paddy who keeps a stock of whiskey in bottles that should contain developer. In almost every case, he's a specimen who couldn't hold down a studio job for ten minutes.

We hope we aren't touchy, nor as prudish as our maiden aunt who felt personally affronted by Jack Benny's skirted antics in "Charley's Aunt," and left the theatre to prove it. But we would like—just once—to see a cameraman in a movie portrayed as neither a buffoon nor a boor, but as what he really is: a generally well-educated gentleman with a job to do—a professional job, which requires specialized knowledge, skill and training no whit behind that expected of such a "professional man" as a doctor or lawyer. For that matter, you could take a group of representative directors of photography, and put them in the midst of an equally representative group of doctors, lawyers or business-men, and in appearance, manner, or speech we would defy you to tell which is which. Why not show them that way on the screen—at least occasionally? Isn't it really to the industry's discredit to keep on fostering the impression that one of the most responsible jobs in production is filled always by men so uncouth, ill-educated or besotted that they're only good for a low-comedy laugh?

THE action of the Short Subjects Branch of the Academy in inaugurating a monthly press showing of the month's best shorts is a step toward recognition of a branch of production which has gone too long unrecognized in these days of double bills and "B" pictures. Dramatically, technically and artistically the short-subject can be and should be the proving-ground for ideas, techniques and personalities later to be brought to more expensive fruition in features.

The first program shown had its shortcomings—notably, perhaps, too great a sameness in the material. But even so, it was the birth of a new idea. Let us hope that these monthly showings will advance the cause of the short-subject, and bring it to the point where those who make and sell them will realize that they need not be the unrecognized half-brothers of the big pictures, but—if properly produced—can be as one shorts producer used to say, "The Spice of the Program."



# A.S.C. on Parade



A surprise visitor this month is Al Gilks, A.S.C., who, as Lieutenant Gilks, U.S.N., has been on active service with John Ford's unit of the Navy Photographic Section since early last fall. We can't say much about what Al's been doing, but reports we get from other A.S.C.-members in the service indicate that he's been places in a big way, and is doing one whale of a job for Uncle Sam.

John Alton, A.S.C., is directing the photography of Republic's big special, "Icecapades"—his last studio job, we hear, before being sworn in as Captain Alton, Signal Corps, U.S.A.

And yachtsman Verne Walker, A.S.C., so we hear, has just returned from a tour of high confidential sea duty aboard his yacht, now a Coast Guard-Navy auxiliary.

Clifford Stine, A.S.C., who recently joined the Photographic Section of the Army Air Forces, is now reported to be in charge of the Camera Department at Wright Field, the Air Forces' big experimental plant. Drop us a line, Cliff—and a picture of yourself in uniform to help dress up this page!

Speaking of pictures, Len H. Roos, A.S.C., F.R.P.S., sends a cheery note from Honolulu, where he's one of the officially-accredited newsreel correspondents, and says he's sending a picture of himself in uniform. Hope the censors don't think that Len in a tin hat is a military secret—!

Prexy Fred Jackman, Sr., beaming and passing out cigars, accounts of he's a grandpappy again—with the cooperation of younger son Joe and Mrs. Joe. It's a girl.

Highlights of the recent S.M.P.E. Convention in Hollywood were some very swell papers on the practical aspects of cinematography by John W. Boyle, A.S.C., Farciot Edouart, A.S.C., L. William O'Connell, A.S.C., and Winton Hoch, A.S.C. Johnny Boyle rates a special bouquet of orchids for the way he carried through on the difficult assignment of organizing a symposium of papers on cinematographic problems, in spite of the fact that production chores at Universal kept him busy until the last moment before S.M.P.E. Prexy Emery Huse, A.S.C., dropped his gavel to open the convention.

Joe Walker, A.S.C., draws the assignment to photograph Columbia's biggie, "My Sister Eileen."

We hear Harry Stradling, A.S.C., is looking for a new Assistant Cameraman now that his regular Assistant, Bob Moreno, has joined the Navy's Photo Unit.

Byron Haskin, A.S.C., knocking off twenty pounds of avoirdupois to streamline himself for the physical exam that's slated to put a Major's insignia on his shoulders.

Archie Stout, A.S.C., spends a lot of his time lately at his tungsten mine in the Sierras. He's mighty relieved lately, thanks to a reassuring cable from son Junius, on duty with the same Navy Photo Unit Lt. Harold "Winnie" Westrom, A.S.C., skippers, reported safely arrived at some unannounced destination "down under."

Glenn R. Kershner, A.S.C., pounds lighter after a siege of pneumonia, is Senior Air Raid Warden for his Culver City district. We hear he's taking bows for having the best-organized A.R.P. unit in Southern California.

Stanley Cortez, A.S.C., reports not even the glamor of a movie troupe under their noses can lure America's anti-aircraft gunners away from their posts. On location at an unnamed spot along Southern California's coastline, letting the landscape double for the White Cliffs of Dover for a scene from "Eagle Squadron," Stan found himself set up literally in the shadow of the Ack-Acks. But in spite of the alleged glamor of the movies, not a gunner took a step away from his post all day. Tokio papers please copy!

Family confidence, we'd call it—"Woody" Bredell, A.S.C., spending two weeks making tests of sister-in-law Deanna Durbin for her new pic. We know of plenty of in-laws who'd make a session like that an excuse for a battle of the rushes... guess "Woody" is not only a darn good cameraman, but an equally expert diplomat!

Nice to see Karl Struss, A.S.C., and Will Cline, A.S.C., teamed up again at Paramount, a-Technicoloring "Happy Go Lucky." After the swell job they did on "Aloma of the South Seas"—an Academy Award contender—we're looking forward to seeing this one—if they can keep a certain art director from mishandling it!

Len Smith, A.S.C., fully recovered from his recent illness, and back to work again at MGM.

Harry Perry, A.S.C., off to work, to film special scenes and backgrounds for RKO's "The Navy Comes Through." We bet Harry'll "come through," too!

Joe McDonald, A.S.C., the recipient of a new contract at 20th-Fox.



Have you encountered this unusual car purring over Cahuenga pass morning and evening—? If you have, you were probably too surprised to recognize its driver as Roy Hunt, A.S.C., who built this land-going cruiser himself. It's powered alternatively with a Mercury motor and a steam engine Roy designed and built himself. Well, if the steamer will run on fuel oil, kerosene or even third-rate bourbon, the way some do, Roy may be the only one of us who can laugh if gasoline rationing comes to California!

Speaking of cars, Honorary Member E. O. Blackburn, A.S.C., seems to be leading some sort of an automotive double life. We hear he drives to work in his usual car, as the dignified Hollywood V.P. of J. E. Brulatour, Inc. Business attended to, he ducks quickly out a side door and drives away in another bus, specially blazoned with Red Cross insignia, as Eddie Blackburn, go-getter for the Red Cross!



# PHOTOGRAPHY OF THE MONTH

## MOONTIDE

Twentieth Century-Fox Production.

Director of Photography: Charles G. Clarke, A.S.C.

Put "Moontide" down on your list of "must see" productions. In addition to offering the American debut of a decidedly noteworthy new star—Jean Gabin—and a half-a-dozen intriguing acting performances, Charles G. Clarke, A.S.C., has made it one of the finest examples of mood photography to be released this season. Even if you like nothing else about the picture, you'll appreciate what he has done with his camera and lighting.

Laid as it is in the picturesque locale of a California town's waterfront, and depending entirely on character performances dramatically, "Moontide" is the sort of picture which leans heavily on the skill of its director of photography, and at the same time offers him endless, satisfying opportunities for creating pictorial moods. Charlie Clarke has risen magnificently to the occasion. His effect-lightings—both on sets and players—deserve careful study. To a very high degree they combine effectiveness—both pictorially and dramatically—with an impression of unstudied realism which is extremely hard to achieve. They seldom look like "effect-lightings" in the ordinary sense; instead, they're just what you'd expect in reality in such a place. They're so convincing you aren't conscious of what they do to build pictorial and dramatic effect.

His treatment of the players is excellent. Jean Gabin, of course, has a face which is a natural invitation to anyone with a penchant for strong portrait-lightings; and Clarke responds, without ever becoming obvious about it. His treatment of Ida Lupino, in her transition from a forlorn waif to a radiantly happy wife, is another model of cinematic good taste. Again, he avoids the obvious, but makes the most of every opportunity.

Technically, "Moontide" offered many problems. Photographed entirely on a stage, it yet manages to convey with rather remarkable success the impression of natural exterior photography. The night and fog effects are of course comparatively easy; but lighting up this huge area for day effects—and keeping them believable—is a real achievement. For dramatic effect, I'd have liked to have seen these day-shots slightly lower keyed; but for realistic effect, Clarke's treatment could hardly be improved.

Director Archie Mayo deserves an orchid for his deft use of pantomime, and he and Clarke should share honors for an unusually interesting montage used to portray Gabin's colossal spree at the start of the picture. It's worthy

of careful study, and enthusiastic applause. The sound-recording could have been improved; but Gabin's style of delivery makes this difficult, as he has a tendency to "throw away" lines by reading them at an unusually low volume-level.

## MY FAVORITE BLONDE

Paramount Production.

Director of Photography: William Mellor, A.S.C.

A few months ago I dropped in on Billy Mellor while he was photographing "My Favorite Blonde," and he told me how he was trying to treat it to maintain the low-key treatment necessary for a spy melodrama with the higher-keyed effects necessary to be sure none of Bob Hope's gags would be lost in the shadows. He was, he told me, keeping everything low-keyed except the particular spots where Hope was enacting his "business," and keeping the brilliance there from appearing obvious. That's a difficult thing to do, especially under modern production conditions, and I frankly wondered if he could do it.

It is a pleasure to report, therefore, that the evidence on the screen shows he can. He builds to excellent melodramatic effect, but never seems to let the audience miss one of Hope's gags. In addition, he does more than ordinarily well by Madeleine Carroll. The result is worth seeing—even if Hope's comedy hasn't already lured you past the ticket-office!

## THE GREAT MAN'S LADY

Paramount Production.

Director of Photography: William Mellor, A.S.C.

Here's a picture that's well worth seeing from every angle, with particular praise for the job of camerawork Billy Mellor, A.S.C., has turned out. He has to cover an unusually wide range of moods and effects in this story which sprawls across the better part of a century, and he does it with a deft sureness that characterizes all of his recent work.

His treatment of the players is excellent, especially as regards Barbara Stanwyck who, in the younger ages of her role, makes the best photographic appearance she's made since "The Lady Eve." Makeup artist Wally Westmore, incidentally, deserves high praise for an unusually convincing job of makeup in which he takes her, in successive stages, from young girlhood to the age of 110. It is one of the few examples of old-age makeup which seemed at all convincing on a woman player.

We can't help wondering, however, why in the scene in which Joel McCrea drunkenly shoots out the candles in the niche—an effect-lighting anyway—Mellor didn't dim out the illumination of the

niche as the candles were extinguished.

The uncredited miniatures and process-projection work, which we assume to be by Gordon Jennings, A.S.C., and Farciot Edouart, A.S.C., are excellent, especially the scenes of the flood.

## MEET THE STEWARTS

Columbia Production.

Director of Photography: Henry Freulich, A.S.C.

Henry Freulich, A.S.C., turns in his customarily competent brand of camerawork in this routine little comedy of young married life. With the exception of the opening sequence—obviously shot under most unfavorable weather conditions—nothing in the picture is open to criticism, and both his effect-lightings and his treatment of the players deserve decidedly warm praise. We particularly liked his treatment of the two sequences in the darkened house, which had a naturalness that takes them well out of the conventional effect-lighting class.

## MISS ANNIE ROONEY

Edward Small Production, United Artists' Release.

Director of Photography: Lester White, A.S.C.

Lester White, A.S.C., has handled this picture with one of those jobs of camerawork so well keyed to the requirements of the story that it's likely to be badly underrated. Beginning in the \$35-a-month apartment of an ex-policeman, and running the gamut from that to a swank Sutton Place apartment, White keeps his treatment excellently keyed to the scenes he is photographing. You're not really conscious of what a genuinely good job he's doing until you imperceptibly notice that he is building to definite dramatic camera-treatment as the story reaches its dramatic climax. There, his lighting does a great deal to add force to the action.

White's treatment of the players—especially Shirley Temple—is excellent, though now that she's growing up, it seems to us that a slightly more pronounced diffusion treatment would be desirable in the young lady's closer shots.

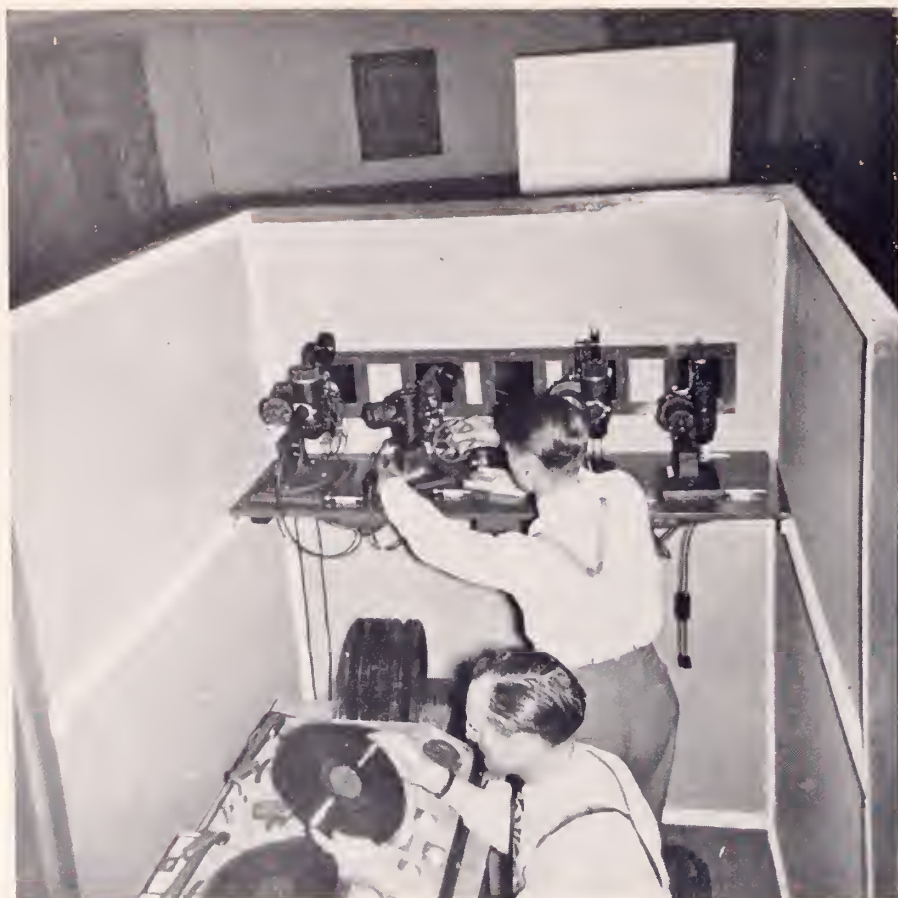
## FLY BY NIGHT

Paramount Production.

Director of Photography: John F. Seitz, A.S.C.

John Seitz's camerawork does a lot to lift this unpretentious little cops-and-robbers spy melodrama out of the routine class. Even though it was obviously turned out in a hurry, it has the customary Seitz polish to its visual presentation, and his effect-lightings are exceptionally interesting. He does very well by his players, too; Nancy Kelly, for example, hasn't appeared to better advantage in quite a long time.





# Projection — Unlimited!

By HAROLD O'NEAL

Associate Projectionist  
Long Beach Cinema Club

SOMETHING was wrong! Although in a possibly misguided moment our amateur cine club had been called the "most progressive" in the United States, many of us saw that such an appellation was not a compliment as much as it was actually a challenge to continual improvement—and we had plenty of room for that!

In particular, we saw a need for better film presentations at club meetings; although we had read plenty of articles on the importance of showmanship in projection, yet in actual practice there appeared to be a bogging-down point far from the easy perfection all the articles stated could be readily obtained merely by following a few simple rules.

We wanted smoother showings, too, at our annual film extravaganza, when special invitations—and a few threats—were sent to all our friends to join us in viewing our club productions and the best work done by individual members during the year. Improvement was certainly desirable, we believed, in our projection technique at the week-long hobby-show given yearly in the municipal audi-

torium, when a continuous afternoon and evening show of amateur movies was given, on regular theatre-like schedule.

We had the best of projectors and screen with members alternating in bringing their double-turntable equipment to furnish background-music. We had a loyal projectionist who followed the standard accepted practices of presentation; yet in spite of following all the rules in the book, the results still did not satisfy us.

When our club visited other movie groups we found much the same situation and procedures, and also just about as much confusion attending their film showings. Of course the cineamateurs were very considerate and understanding, and probably didn't even notice the obvious discomfort of the casual guest. The enthusiasts are used to showing movies at home, and are hardened to the ordeal of getting the projector positioned correctly in relation to the screen, high enough, with the aid of the projector-case or Webster's Unabridged to clear the bobbing head of Aunt Sue with her fluffy hair, and of realigning it every

time a reel is changed or one of the children "accidentally" jars the projector or one of its many supports—(why don't children settle down and look at the pretty scenery, anyway?)

The old-timers can manage a smile when the room-lights are snapped off, then on, then off, as the projectionist corrects a lost loop or makes an emergency splice. Their ears, used to the grind of a projector, are able to tune out much of its noise, along with the rattle of film cans, the click of records, and the stage whispers between the projectionist and sound-man as to the proper music for background with the next "epic." The hardened amateur does not allow the escape of stray light from the projector and the turntables to bother him, and can maintain an amazing degree of concentration on the screen as the operator stumbles around in the dark lining up the next picture or putting away the last one.

All this we, too, took for granted—for quite a while—accepting it as part of the privilege of being one of the friendly fraternity of filers. We did our bit to help—by taking a turn with the other members at standing in back of the projectors or turntables offering advice: "Couldn't the focus be sharpened?" and "Better clean the aperture," or "That music seems pretty slow for a comedy, doesn't it?"

Our discontent began to jell after we had spent several evenings viewing movies at the home of our fellow club-member, Ray Fosholdt. The pictures we had tolerated at the club took on new beauty, and we even felt a little pride in an old film of our own! Now, Ray has a den built with a projection-both eyeing into one end, both den and booth being soundproofed, and as we saw our celluloid strip making a much better attempt to put across its story than it had been able to do previously, with the background music accepting its responsibility without competition from projection noises, without the confusion of lights and bustle between reel changes, we realized that our club, at least, needed better projection facilities.

In considering the problem of movie projection for the amateur club in general it seems that the ideal arrangement can be summarized as follows: Have an enclosure or booth in which the projectors and turntable equipment can be operated with adequate lighting so that films and records can be located and easily readied for use, and so that projectionist and sound-man can confer conveniently for proper music and cues, yet sufficiently sound and light proof to prevent distracting noise and light from reaching the audience. A method of controlling room lights from the booth, also, will be almost essential to smooth performance and lessened confusion. In addition, this enclosure should lessen the possibility of friendly but sometime disconcerting advice and assistance, such as happened recently at a club meeting when a member tried to find a record which might fit his particular film—



and in using the unfamiliar rack, broke a disc somebody else had just bought for a special film!

A built-in booth was out of the question for our club, as we occupied a room used constantly by other groups—a situation probably duplicated by most other clubs. In any case there was no room (much less money in the club treasury!) for a permanent installation. The answer to our problem appeared to be a portable booth, one that would be inexpensive, quickly and easily set up, small enough when disassembled and not in use so that it could be stored easily, and one which could be readily transported to other locations for special occasions.

When, following the club elections, I found myself on the Sound Committee, and assistant to the club projectionist, Val Pope, it seemed a good time to put ideas into action. Bob Hadley, our new president, and the directors, "Midge" Caldwell and Ray Fosholdt, easily saw the need for improvement, and agreed that the club should defray the cost of materials. Projectionist Pope offered his assistance, and we began construction on what we hoped would become a valuable piece of club equipment.

A few general statements and suggestions can be made, even though construction details may be apparent from the illustrations. Provide a booth large enough to house at least four projectors—two eights and two sixteens. This will permit an uninterrupted show, and on multi-reel subjects an instantaneous changeover may be made, as in professional practice, by a simple switching arrangement.

We made the walls of the booth each approximately five feet wide and seven feet high. These three wall panels are jointed by butt hinges, with easily removable pins, and make an enclosure five feet square. Weight and sound-transmission were reduced by the use of a sound-absorbent wallboard, one-half inch Celotex having been used in our construction, and we have found that the separate sides are light enough and small enough to be handled by one person if necessary.

A word of warning before having the millman groove the 2x2's used as a frame for the Celotex: be sure that the groove is in the exact center; otherwise you may have trouble in matching sides and fitting the board. Incidentally, we believed it wiser not to paint the Celotex due to possible lessening of the sound-absorbent qualities, but we did apply two coats of a sizing preparation to increase surface toughness somewhat.

Our booth is a three-sided affair, as it is used against the back-wall of the clubroom; when it is used in large halls provision is made to hang a curtain over the fourth side. For ventilation, and to prevent tripping against the sides of the booth, the bottom of the panel was raised a few inches off the floor. No provision was made for a roof, and none has been found necessary so far. All three sides were constructed alike, with

Reading from top; assembling the projection-booth; the booth knocked down; putting the projector-shelf in place; detail of projector mounting, showing how projector can be swiveled for easy threading; bottom, detail of wiring beneath shelf.

a keyhole saw then having been used to cut the ports into the front side. We placed a fifth port in the center and in line with the projection-ports to serve for observation, and directly below it and below the projector-shelf another observation-port so that the sound-man, when seated, could see the screen. Although the arrangements shown here is satisfactory with Filmo projectors, the exact size and location of the ports will vary according to equipment used and individual preference. Another construction note: In setting the glass ports in place, cutting them from good quality plate-glass, or old glass negatives if available, there will be room in the one-half inch thickness of Celotex to tilt them downward, minimizing reflection. Use putty to hold the glass in place, smoothing it even with the edges of the wooden framing.

The shelf on which the projectors sit is the heart of the entire construction and should include all of the operating features to refine and speed your movie presentations. It might be that your club would prefer to construct this part first, with the idea of later building the complete booth, or that an amateur would want such a board for use in his own home, where a booth might not be feasible. Also, there is no reason, even with the complete booth available, why there may not be occasions when the board, with a proper substitute support, cannot function alone to help present your program much better than would otherwise be possible. Various other changes and adaptations will undoubtedly suggest themselves for special uses.

This shelf, being a separate unit which will merely be supported in proper position by the walls of the booth—and high enough so that the projectors will overshoot by a safe margin the head of your tallest spectator when seated—should carry all of the electric wiring and controls for the projectors. So that even a distant outlet may be reached, provide a long, heavy-duty lead-in wire, attached permanently to the under side of the board—it will be one essential item which you will no longer need worry about forgetting or misplacing. Provide at least three double outlets on the board to allow for snap-it pilot lights and extra installations. One of the outlets should be run through to the top of the board to provide lighting for the projection shelf.

Two double outlets are provided for the four projectors, the current being fed to either one or the other outlet from a double-throw, double-pole switch; two of these switches used together are found in homes where the same light is turned on or off by two different

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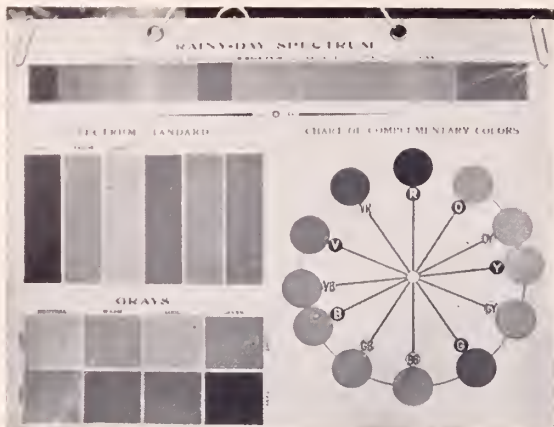


Fig. 1

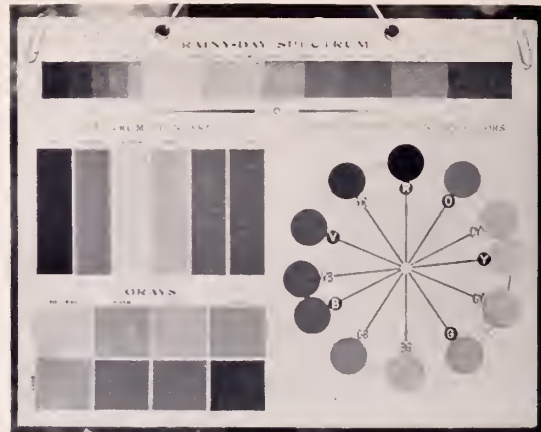


Fig. 2

# DEBUNKING FILTERING

By ARCHIE J. STOUT, A.S.C.

**M**ORE misleading things have been said and written about filtering than about almost any other part of photography. Every expert and near-expert seems to have his own pet theories on the subject, while every manufacturer has his own names (and claims) for the particular types of filters he manufactures. And if that wasn't confusing enough, most of us who have had professional experience base all our discussions on the designations of the various Wratten filters—which, as a rule, are obtainable for 16mm. and 8mm. use only on special order!

If you strip the subject down to its prime essentials, though, it's really surprisingly simple. Once you know *how* a filter (any filter) works, and *what* the basic types of filters do in general, you can throw away 99% of the experts' verbiage, and get results on the basis of your own understanding.

Regardless of the type of film or the color of the filter, the essential action of all filters is based on the same underlying principle. The results differ, naturally, but the principle remains unchanged.

While all films are sensitive to light, none of them are *uniformly* sensitive to

*all* colors of the spectrum. This is fortunate, for if a film reacted uniformly to all colors, it would render all colors identically. As it is, since the film is more sensitive to some colors than to others, it renders these as lighter, and the colors to which it is less sensitive as darker shades of gray. In other words, for a given exposure, the light of colors to which the film is more strongly sensitive will produce a greater exposure, while light of colors to which the film is not so sensitive will produce less exposure. If the film is absolutely insensitive to any given color, light of that color simply won't produce any exposure at all, and that part of the picture will be rendered as black.

The earliest films were "color-blind"; they were sensitive largely to blue, but were not affected at all by red light, and very little, if at all, by light of any other colors. So they rendered blue as white, red as black, and most of the other colors as a pretty dark range of grays.

The next step was Orthochromatic film, which was still partial to blue, but could "see" yellow rather better, though it was still pretty blind to the rest of the spectrum.

Finally came panchromatic film—the

type most of us use today. Theoretically, this film is sensitive to all colors; in practice, it is still rather partial to blue and yellow. Some types are rather strongly sensitive to greens (like some of the DuPont emulsions) and render greens comparatively light. Others (like some of the Agfa emulsions) are more sensitive to red than most emulsions, and so render red in a lighter gray than the average panchromatic rendition.

But with any type of panchromatic film, we still get a color-rendition which is basically like Figure 1, in which you'll notice red is rendered darkest, orange considerably lighter, yellow quite light, green distinctly dark, blue an intermediate gray, and violet just a shade darker.

Now, suppose we put on a yellow filter. This will stop all the ultra-violet light, and hold back some of the violet and blue (exactly how much depending on how deep a yellow the filter is), and it will pass the yellow and red unhindered, also letting the yellow component of anything green go by unhindered, but holding up the blue component. So you can expect something like Figure 2, which was made with a medium-yellow filter (a Wratten K-2). You'll see that the red and orange aren't changed

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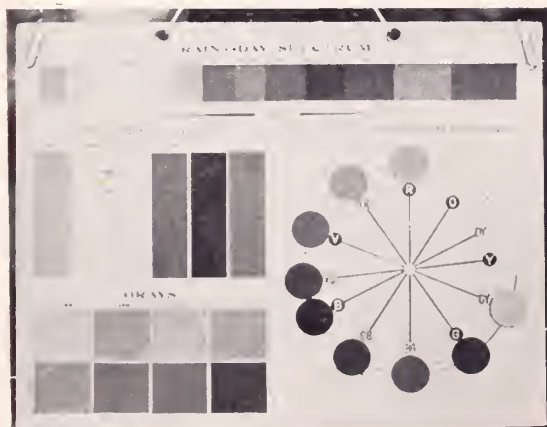


Fig. 3

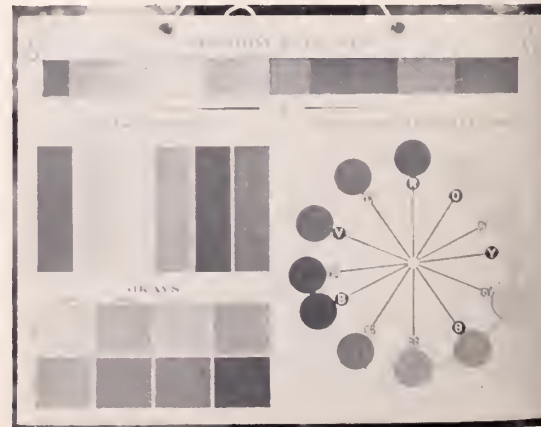


Fig. 4





# Making Composition Work For You

By PHIL TANNURA, A.S.C.

**T**O MANY people, composition seems to be something "arty" and abstract—a matter of making your pictures decorative to look at, but otherwise very far removed from the daily problems of the practical picture-maker.

Nothing could be more mistaken! There are about two hundred of us here in Hollywood, members of the A.S.C., who make a very large part of our daily bread and cheese by putting composition to the very practical use of making movie audiences see what we want them to see, the way we want them to see it. And the same principles that we use in our 35mm. compositions will work just as well when applied to composing scenes for 16mm. and 8mm. film.

Leaving the decorative factor completely out of it, composition is a very practical means of guiding the audience's eye to whatever is most important in our scene—emphasizing what should be emphasized, and subordinating what is of lesser importance.

There are three chief means of emphasis in a motion picture composition: *position*, *tone* or (in Kodachrome) color, and *motion*. Usually, in a single composition we may be likely to put all three to work in various combinations. If we make them work *for* us, the result is not only a "good" composition, but a scene that tells its story the best and most efficient way. If we let them work *against* us, the scene is likely to be not only a poor composition, but confusing—hard-to-follow—dramatically and visually.

The first thing to remember

about using position for compositional emphasis is the fact that when we look at any picture (whether painting, photograph or movie), the eye subconsciously starts in at the lower left-hand corner, and moves diagonally upward toward the upper right-hand corner, unless something intervenes along the way and diverts it along some other course.

Therefore it's best, if you can, to try to place whatever in your scene is most important somewhere along this upward left-to-right diagonal. If you can't do this, have something—it needn't be very big; it can even be a twig or a splotch of shadow if it's in the right place—athwart this line to divert and redirect attention toward your principal object of interest.

Above, note how shadow in foreground changes emphasis in this picture, and also guides attention to people. Below, the constant movement of the torch's flame is almost certain to distract attention from the actor's face.



But there's another factor in positional emphasis that's important. With of course the exception of objects in the immediate foreground of a long-shot which serve to "frame" your scene, *whatever is nearest the camera is likely to be the dominant factor in a composition*. It's bigger on the screen and (unless you deliberately throw it out of focus to "de-emphasize" it), it's likely to at least *seem* better defined, especially with the immense depth of focus in substandard camera-lenses.

Tone and color values can make or mar a compositional emphasis, perhaps more strongly than anything else. A small object in your scene which is lighter in tone than the real object of chief interest is always likely to "steal" the scene, or at least prove a distracting note. An object which is both lighter in tone and large in area will almost invariably subordinate your object of chief interest, no matter how the two may be placed within the frame.

This tonal domination, remember, may come not only because the object in question is actually lighter in visual tone or color, but because it is in a shade which photographs more strongly, or because it is made lighter by being more strongly illuminated, so that it is rendered lighter photographically. For example, suppose you have a girl in a red dress, in the shade, and a yellow canvas lawn-chair, in the sun. To the eye, that red dress will dominate what you see through the finder, because red is visually the brightest color. But photographing that scene with average black-and-white panchro-

(Continued on Page 272)





## A Picnic Scenario That Won't Waste Your Tires

By H. WILLIAM MOORE

**R**UBBER and gasoline shortages will probably put a crimp in many a family picnic this summer—but here's a picnic comedy you can film without wasting either tires or fuel. It has been slanted to cover two special points. First, to be filmed in the open so you can capture the picnic atmosphere, yet without having to wheel the family bus out of the drive. Most of the scenes can be shot, if necessary, in your own back-yard (or your neighbor's), in the local park, or almost anywhere.

Secondly, most people who shoot 16mm. or 8mm. home movies want their offspring to star. All right—this script is built around the sort of youngster to be found in most American homes. Of course, like any star, "Cuddles" has a lot to do in this homespun comedy; but if he (or she) is half as wonderful as you think he is, these scenes will give you a much better showcase for your young pride and joy than the ordinary home movie does.

### "PICNIC JAM"

Main Title: "Picnic Jam"

Credit Title: The Cast—

Joe (The husband)

Nancy (The wife)

Cuddles (The baby)

### SLOW FADE:

Scene 1: (Slow fade in) Full long shot of home—Joe, Nancy, Cuddles.

Open cold on pictorial shot showing "home place" to best advantage. Frame the house in trees if feasible. The family car should be parked in the drive or at the curb and included in the scene.

### DISSOLVE TO:

Scene 2: Close shot—Front door—Cuddles (Low camera angle) Door opens and Cuddles comes through open-

ing. He has jar of jam in hands and is wrapped up (mentally) in the jam. Cuddles looks back in house as he hears his parents coming.

### CUT TO:

Scene 3: Full shot—Cuddles—Nancy—Joe. Joe and Nancy come into the scene. Joe is loaded to the neck with blankets, baskets, boxes, and all the usual hodge-podge that makes up a "picnic in the woods." Nancy is mentally checking to see if anything has been forgotten. Cuddles busy with jam.

### CUT TO:

Scene 4: Close-up—Nancy. Nancy has finger at side of mouth, eyes rolling to the ozone, repeating the items needed for the excursion. A sudden expression of "Oh, I forgot something!" floods her face. She turns to Joe.

### CUT TO:

Scene 5: Two shot—Joe and Nancy. Nancy gesticulates wildly that she has forgotten something and will be gone only a minute. She re-enters house. Joe's head turns after her.

### CUT TO:

Scene 6: Close up—Joe. Joe turns back to camera. Shrugs. Registers expression: "Oh, well . . . you know women . . ." He looks down over his armload for Cuddles. His expression shows that Cuddles isn't there. He lifts his eyes to front lawn. Registers that he sees Cuddles, then breaks into broad smile.

### CUT TO:

Scene 7: Medium shot—Front lawn—Cuddles. Cuddles walks into scene, still lugging jar of jam. He puts jam down on grass, then sprawls out on his stomach with jam in front of him, cups chin

in hands and looks fondly at the tasty spread.

### CUT TO:

Scene 8: Close-up—Cuddles. (Camera at low angle, jar of jam next to lens and right of frame.) Cuddles shakes head in perplexity as if thinking: "How'm I going to get into that jam . . .?" Then he looks back over shoulder to where his father is standing.

### CUT TO:

Scene 9: (Same as 5.) Joe and Nancy. Joe is looking at door as Nancy flutters through and holds up an item for his inspection.

### CUT TO:

Scene 10: Extreme close-up—Can-opener. Nancy is holding a can-opener between thumb and forefinger.

### CUT TO:

Scene 11: (Same as 9.) Joe wags head in resignation: "I might o' known it!" Then, he flips head: "Come on . . .!" Nancy looks meek and says: "Yes, Joeey. . ." They walk into camera.

### CUT TO:

Scene 12: Medium-shot — Joe and Nancy. (Shoot over hood of car, or through rolled down window for special effect.) Joe and Nancy are walking toward car. Joe loaded to the masthead; Nancy tripping gayly with—the can-opener. (Build this for comedy.)

### CUT TO:

Scene 13: Reverse angle of Scene 12. Joe and Nancy reach the car. Nancy turns towards camera.

### CUT TO:

Scene 14: Close shot—Nancy. Nancy looks to right of camera lens, she spots Cuddles. She places hands on hips, saying: "Cuddles, come here. . .!" She starts walking into camera and to the right.

### CUT TO:

Scene 15: Medium-shot—Cuddles—Nancy. The jar of jam is on the grass



and Cuddles is walking around the jar in a small circle. His hands are behind his back. He's still pondering the problem: "How do I get into the jam?" (Nancy enters scene from camera and left of frame.) Nancy goes to Cuddles, picks up jam and Cuddles (or kneels if he is too large to hold).

CUT TO:

Scene 16: Close shot—Cuddles and Nancy. Nancy brushes his hair with one hand and starts to speak:

Title: "This is one day you're not getting into any jam!"

Scene 16-A: Finish of Scene 16. Finishing the speech, they move into camera and right.

CUT TO:

Scene 17: Medium-shot—Joe—Car—Nancy and Cuddles. Joe is in the act of throwing the last piece of paraphernalia in the car. It tumbles out on the ground. He picks it up and throws it in again, this time closing the door hastily, and and then turns toward camera, leaning his back up against the door, and mops his perspiring brow with a handkerchief. (Nancy and Cuddles enter from camera left.) Joe waits till they get up to door, then opens the car door for them. The package falls out again on the ground.

CUT TO:

Scene 18: Close shot—Joe. Joe rolls his eyes so that the white of the ball is seen. He starts to retrieve the package.

CUT TO:

Scene 19: Full shot—Joe—Nancy—Cuddles. Nancy and Cuddles get in the car. Joe has stooped down to get the package, starts to raise up and hits his head on handle of car door. He freezes on the spot, reaching for his damaged dome at the same moment.

CUT TO:

Scene 20: Close shot—Joe. Joe is gritting his teeth, eyes blink slowly and in rhythmic cadence. No words are needed to let the audience know what he is thinking. . . .!

SLOW FADE TO:

Title: "In the Calm of the Forest . . ."

Scene 21: Full-shot—Picnic set—Nancy, Joe, Cuddles. Tablecloth is spread on grass in open glen. Trees and shrubs surround the spot. (Any typical picnic locale.) On the tablecloth we find plates, food, etcetera, being placed by Nancy. Joe is away from camera and stretched out on the grass, head propped against the base of a tree or in some other state of repose. Cuddles is nearest the camera. He is speculating on the progress his mother is making toward the food preparations. He has the can-opener in his hand. In the center of the tablecloth . . . is the jar of jam.

CUT TO:

Scene 22: Close shot—Joe. Joe registers an expression of keen satisfaction, saying to himself: "Ah . . . peace . . . at last. . . .!"

CUT TO:

Scene 23: Medium-shot—Nancy. (Cuddles does not show in this.) Nancy is studying the tablecloth to see that everything is ready before she disturbs Joe.

She notes lid has not been removed from jar of jam. She reaches for jam and heads for poor Joe.

CUT TO:

Scene 24: Medium close shot—Joe and Nancy. Joe is almost asleep. Nancy comes into scene. She shakes Joe. Joe awakens with start. Nancy tells him to open jam. Joe takes jar and starts to twist and pull on lid.

CUT TO:

Scene 25: Close shot—Joe. (Angle over Nancy's shoulder) Joe pulls and tugs on lid. He can't get it off. He asks: "Where's the can-opener?"

CUT TO:

Title: "Where's the Can-opener?"

Scene 25-A: Same as end Scene 25. Joe finishes speaking.

Scene 26: Close shot—Nancy (Angle over Joe's shoulder). Nancy repeats: "Can-opener . . .?" Thinks for a few seconds, turns away from camera, spots Cuddles with the opener, and registers: "Oh, . . . Cuddles!" Starts to rise.

CUT TO:

Scene 27: Medium-shot—Cuddles—Nancy. Cuddles, with background of shrubbery or other pictorial setting, is industriously digging the earth with the illusive can-opener. Dirt is flying and he is having a wonderful time. (Nancy enters) Nancy reaches down, takes can-opener, and heads back for Joe.

CUT TO:

Scene 28: Close-up—Cuddles. This should be a natural expression of: "What'ya do that for, moms . . .?" Cuddles gets up.

CUT TO:

Scene 29: Medium-shot—Tablecloth and Food—Cuddles—Nancy (Angle is such that Nancy and Joe are not seen). Food fills left of frame; Cuddles is to right of set. Cuddles is looking the table over with a "hungry" eye. (Nancy enters with opened jar of jam.) Nancy comes into set from left. Places jam on tablecloth, then exits the way she entered.

CUT TO:

Scene 30: Close-up—Cuddles. Cuddles fixes a stare on jam. He can't believe his eyes!

CUT TO:

Scene 31: Flash close-up—Jam. The jam—waiting . . .!

CUT TO:

Scene 32: Same as Scene 30. Cuddles smacks lips in anticipation. Boy, if he could only get a finger into the amber spreading before him spots him. He looks from spread to direction his mother disappeared.

CUT TO:

Scene 33: Medium-shot—Nancy (Low angle). A pictorial shot with Nancy relaxing. She is paying no attention to Cuddles. This should be well composed and definitely an angle to show Nancy off at her best. (A quick shot.)

CUT TO:

Scene 34: Close-up—Cuddles. Shifts sly look a bit to take in father.

CUT TO:

Scene 35: Close-up—Joe. Joe is sleep-

ing. He has handkerchief spread over face and exhales as shot begins. Handkerchief billows out.

CUT TO:

Scene 36: Medium-shot—Tablecloth—Cuddles (Shoot across tablecloth and food). Cuddles knuckles down to all "four feet" and starts advancing toward jam.

CUT TO:

Scene 37: Reverse angle of Scene 36. Shoot over back of Cuddles and focus to cover jar of jam.

CUT TO:

Scene 38: Medium close shot—Nancy. Nancy stretches gracefully, breathes deeply of the forest air, and turns back toward tablecloth. She gasps an "Oh . . .!" as she spots the despoiler of the jam. She starts for tablecloth on the double.

CUT TO:

Scene 39: Medium-shot—Tablecloth—Cuddles—Nancy. Cuddles has about "two more crawls" between him and jam. (Nancy enters) Nancy comes in from left and catches Cuddles just as he reaches out paw for the tasty jam.

CUT TO:

Scene 40: Close shot—Nancy and Cuddles. Nancy, not too seriously, tells her offspring that he is a naughty boy. She taps him lightly on the rear, and says: "Now, run along and play." Nancy, who has been kneeling down to son, rises.

CUT TO:

Scene 41: (Same angle as Scene 21.) Full-shot—Picnic spread—Joe—Nancy—Cuddles. Cuddles scampers around, not knowing exactly what to do. Nancy, seeing that her chores are done, decides to rest a bit since Joe is still sleeping. She walks over to spot where Joe is. (Camera follows Nancy.)

CUT TO:

Scene 42: Close shot—Joe and Nancy. Joe is still "sawing wood" in comical fashion. Nancy joins him. Settles at his side and snuggles head against his shoulder. Joe automatically places an arm about her. Nancy shows that she, too, is due for a nap.

SLOW FADE TO:

Title: "One Hour Later . . ."

Scene 43: (Angle same as Scene 21.) Full shot—Nancy and Joe—Slow fade-in. (Cuddles is not on set.) Nancy and Joe are still sleeping. (Their positions should be altered slightly.)

CUT TO:

Scene 44: (Same as Scene 42.) A small cluster of leaves that are attached by stems flutters on Nancy's face. She awakens, sits up, looks up to tree, sees that the breeze (or tree) is responsible for her awakening, smiles, and looks for Cuddles.

CUT TO:

Scene 45: Close-up—Nancy. Nancy calls: "Cuddles . . .!" By expression indicates there is no response. Turns to Joe.

CUT TO:

Scene 46: (Same angle as Scene 44.) Joe is still sprawled in sleep. Nancy

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## "SOUNDING" A 16mm CIVIL DEFENSE FILM

By WILLIAM STULL, A.S.C.

CIVIL Defense pictures, regardless of whether amateurs or professionals make them, are most effective if there's a good sound-track to help the pictured action tell its message of preparedness. And while there are plenty of amateur groups in this country filming or preparing to film pictures of this nature for their Defense Councils, not very many of them are lucky enough to own 16mm. sound-recording equipment with which to record their own sound. But that doesn't mean that their films have to go out silent!

Take the Long Beach (California) Cinema Club for example. They've just completed what is probably the first amateur-made Defense Film—an excellent one-reel Kodachrome picture on incendiary bombs. From the start, their script called for sound, in the form of narration, sound-effects and at least one sequence of synchronized dialog. But their available equipment didn't include any sound-on-film recorders, and their budget wouldn't permit engaging a professional 16mm. film recordist to come down to record their single dialog sequence.

Yet their picture, "Fire From the Skies," is being released in sound!

How was this done?

It's simple enough, and, in the most part, something that amateur groups in any part of the country can do, too. They shot their picture first, got it completely edited, and put the sound in after-

ward—which is precisely what many a professional producer in the short-subjects field also does. Pete Smith, for instance, "The March of Time," and most of the newsreels.

The first step was to draft their first script with sound in mind from the beginning. Scenes such as those showing the approved methods and equipment for home fire-bomb fighting were planned, both in subject-matter, angles and footage, so that they'd be well suited for use with whatever explanatory narration was needed. The dialog sequence was planned and written as a "talkie" sequence from the start.

When actual shooting commenced, everything was shot at the standard sound speed of 24 frames per second.

The dialog sequence was directed and filmed with special attention paid to the fact that the words would be post-synchronized to the picture. Even though it was shot silent, the actors spoke their actual lines, as given in the script, and paid particular attention to clear lip-movement.

When the film was sent in for processing, the laboratory was requested not to project the film for inspection, instead of following their usual routine. The reason: the Kodachrome original has to serve the same purpose as a negative; the release-prints are made from it, and that original must therefore be treated with all the respect a user of negative-positive would accord his original nega-

tive. And projection—even in the best-maintained inspection machines of a major 16mm. laboratory—is likely to leave scratches and other abrasions on the film which can never be eradicated, and which will show up on every print made from that original.

As soon as the film came back from the processing, a black-and-white reversal dupe was made from it. This served as a "work print," for viewing and cutting purposes. Without touching the priceless original, the picture was edited in this work print—not only "rough cut," but completely edited and titled, right down to the last frame of trimming.

Then, the tentative narration which had been outlined in the shooting script was polished and timed to match the footage of the film itself. In doing this, not only the picture as a whole, but each scene and sequence was carefully measured for footage on a film-measuring synchronizer. For each foot of 16mm. film, an average of three words of narrative may be used.

At this point, careful rehearsals were begun, projecting the work print in a sound projector (always at sound speed), with narrators Ray Fosholdt and Hazen White carefully practicing their lines and timing, and with the four women who, with Fosholdt, figured as "ghost voices" in the dialog sequence, rehearsing their lines until they could synchronize their words perfectly with the pictured lip-movements on the screen.

All of this was done in the homes of the club-members, so that they could have things as nearly as possible perfectly coordinated before going to the recording studio, for professional recording charges are based on the time spent—rehearsals as well as actual recording time included.

At this point, too, they selected the music they wanted to accompany their picture. This came from carefully chosen phonograph records. In some films of this nature, music is only necessary as an accompaniment for the opening and end titles; but in this film, it was decided that a musical background should run throughout the film, subordinated, of course, to the voices, but always setting a musical tempo keyed to the action. This, too, was carefully rehearsed.

While this was being done, Director Fosholdt edited the original to match the work-print. This job of master-editing had to be precise, for if any scene was only a few frames longer than its footage in the work-print, the final sound print would be thrown "out of sync."

When the original had been matched with the work-print down to the ultimate frame, the group was ready to go to the recording studio. Here, the back-and-white work-print was placed in a projector operated at an absolutely exact 24 frames per second speed. The narrator sat more or less comfortably at a desk in the projection-room, facing the

(Continued on Page 270)



# "ACTION!... CAMERA..."

"ROLL 'EM" . . . Under the direction of the United States Army . . .  
Signal Corps . . .

Enrollments are now being accepted for intensive training and instruction course in Professional 35mm. cinematography for men who are American citizens—20 to 45 years of age—preferably with some basic knowledge of photography—*particularly with a sincere interest in cameracraft* . . .

UNDER INSTRUCTION AND TRAINING  
of the outstanding professional technicians and cinematographers of the Motion Picture Industry . . . in Hollywood . . .

NO FEES—NO COSTS—NO TUITION EXPENSE

ASSIGNMENTS to active duty as Cameramen for Field Service in the Signal Corps, United States Army to those who qualify.

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Make application to your studio representative listed below . . .

Columbia Studio . . . . .	Major S. J. Briskin John Livadary
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Paramount Studio . . . . .	Farciot Edouart
Republic Studio . . . . .	G. L. Lootens
RKO Radio Studio . . . . .	Major John Aalberg
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20th Century-Fox Studio . . . . .	Hector Dods E. H. Hansen
Universal Studio . . . . .	Bernard Brown
Warner Brothers Studio . . . . .	Colonel Nathan Levinson

*If not employed at one of the above studios make application to the*

RESEARCH COUNCIL  
ACADEMY OF MOTION PICTURE ARTS AND SCIENCES  
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# AMONG THE MOVIE CLUBS

## Films for Exchange

Previewed this month are:

"HENRY'S HOBBY," 400-ft. 16mm. b&w scenario about a hen-pecked movie-maker. An excellent scenario-film which should prove amusing to any club. Technicalities well handled, including first-class negative-position home processing. Available through Syracuse Movie Makers Association, D. Lisle Conway, President, 100 Trinity Place, Syracuse, New York.

"THE HAUNTED SCHOOL," 400-ft. 16mm. b&w scenario mystery-comedy. An unusually good job, notable for very good timing, direction, and effect-lightings. Available with post-recorded sound-on-disc, stroboscopically synchronized, if borrowing club will be responsible for replacement of disc if damaged. Also available from Syracuse Movie Makers Association. 8 mm. silent version also available.

Listed, but not previewed, are:

"CRADLE OF LIBERTY," (16mm.) Historical points of interest around Philadelphia.

"PHILADELPHIA MUMMERS PARADE," 8mm. Color newsreel of Philadelphia's annual New Year's fiesta.

"PICNIC DAZE," 8mm. and 16mm. versions available. Club-produced comedy of the difficulties of an artist trying to mix business and pleasure.

"REVERSAL PROCESS," 16mm. Documentary showing process of reversal-processing substandard film.

"RETRIBUTION," 8mm. "Crime Does Not Pay" scenario.

"GOLD IS WHERE YOU FIND IT," 8mm. scenario. Two prospectors strike gold—almost.

"IN OLD VIRGINIA," 8mm. Kodachrome. Historical scenes around Williamstown, Va.

"EVOLUTION OF THE MARWOOD CINEMA," 8mm. documentary showing the building of a basement theatre, from start to premiere opening.

"CLOSE-UPS," 8mm. documentary of production of a movie club's magazine.

"BOTTLENECK," 16mm. What happens to every amateur when he gets his first camera.

"VISITOR IN CAMP," 16mm. Kodachrome. A day's activity in a summer camp for boys.

The pictures listed above are all available from the 8-16 Movie Club of Philadelphia, Exchange Officer, George Burnwood, 3035 Disston St., Philadelphia.



Part of the capacity audience at the Annual Open House held by the Indianapolis Amateur Movie Club.

## Going to Australia?

American cineamateurs who, as members of the American Armed Forces, find themselves on duty in Australia are urged to make themselves known to the Australian Amateur Cine Society (Albert G. Kench, President; Hon. Secretary, Mr. L. Peek), Box 1463 JJ, GPO, Sydney. The A.A.C.S. has voted to make American cineamateurs on duty "down under" Honorary Members of the Society for the duration of their Australian stay, and is eager to extend them the welcome and hospitality befitting the occasion. The Society meets the first and third Monday in each month in the Science House Lecture Hall, Gloucester St., Sydney. Telephone contacts can be made through Publicity Officer J. A. Sherlock, Phone FW 1168.

We sincerely hope that all American amateur movie clubs will extend the same privileges and hospitality to cineamateurs in this country as members of the armed forces of Australia and the other members of the United Nations. We will gladly publish such information if it is made available to us.

## Inter-Club Program in Indianapolis

The May meeting of the Indianapolis Amateur Movie Club, under the chairmanship of Past-President Elmer Culbertson, was highlighted by an unusually interesting inter-club exchange program, secured through the courtesy of THE AMERICAN CINEMATOGRAPHER. Loaned by the Los Angeles 8mm. Club was "Home Movies," an 8mm. comedy by Fred Evans, acclaimed as a super-clever scenario, and screened again by popular demand. Loaned by the Long Beach Cinema Club was "Happy Landing," a 2-reel 8mm. Kodachrome scenario film by Mrs. Mildred J. Caldwell, also pronounced outstanding. From the Los Angeles Cinema Club came "New Hamp-

shire on Parade," International prize-winning Kodachrome scenic (16mm.) by Fred C. Ells, enthusiastically received as one of the finest Kodachromes the Club has ever seen, with perfect composition, exposure and construction. Last, but far from least, was "Doomsday," by Ruth Stuart of England's Institute of Amateur Cinematographers, a grand-prize winner in the AMERICAN CINEMATOGRAPHER'S International Contest, and one of the most unusual amateur movies ever made.

The success of this program is certainly a powerful argument in favor of the proposed Association of Amateur Movie Clubs. The idea has been most enthusiastically received by Indianapolis' amateurs, who look forward eventually to the possibility of a National Convention of Amateur Movie Club members and representatives.

E. M. CULBERTSON,  
Past-President.

## Oakland Finishes Picture

At the May 11th meeting, the Oakland Motion Picture Club completed the final shots in its trick and animation picture "Is Two Enough?"—utilizing practically every trick feature of Dr. H. Y. Lee's Cine-Special. The Club's Board of Directors is also considering the part their Club can play in the proposed National Association of Amateur Movie Clubs.

E. EUGENE LEONHART,  
Director of Publicity.

## Tri-City Meets with Stillmen

The May meeting of the Tri-City Cinema Club (Davenport, Rock Island and Moline) was the Fourth Annual Get-Together Meeting of the Tri-Cities still and movie clubs, with the Moline Photographic Society as hosts. In addition to print competitions and Kodaslide projection by the stillmen present, the cine group presented a program including "Cartooning Home Movies" (35mm. slides) and a 16mm. Kodachrome travelogue, "Guatemala—Land of Enchantment and Color," by Dr. James Dunn, with synchronized music by Mrs. Dunn.

GEORGIA T. FIRST,  
Secretary-Treasurer.



## Farciot Edouart

(Continued from Page 256)

course, standing second in his class—and was kept on at the University as an instructor, to teach others.

After seeing more than a few of his pupils go on to active service, he finally secured his own transfer to more active duties. He was assigned to the 78th Division as Chief of the Division's Photo Section, sent overseas and promoted to Sergeant. And from then on until the armistice, he saw enough action to suit anyone, for the 78th was at the front most of the time, participating in such offensives as St. Mihiel, Grand Pré, and others, first as an American unit brigaded with the British forces, and later as a unit of the A.E.F.

It was at Grand Pré that he had the closest shave of his wartime career. The Germans held part of this picturesque village—still largely untouched by the war—and the heights above. The Americans were advancing on the village, across a little valley and the Loire River. As they got into the town, Edouart, in command of a three-man photographic unit, advanced with them. One man packed a still-camera; Edouart, a Bell & Howell, completely assembled with a 400-foot magazine in place on a back-pack, and a spare magazine and tripod to make sure he wasn't under-loaded; the third man carried film and accessories for the others.

Up the main street of the village they walked, remarking on how peaceful and untouched the place looked. Coming to a cross-street, Edouart instinctively paused for a moment at the corner. Just as he was about to step on across, a doughboy yelled to him to duck back. Down that innocent-appearing cross-street, he learned, was a German machine-gun, which had already taken toll of half-a-dozen Yanks who incautiously walked past the corner!

Still looking for a good photographic vantage-point, Edouart spotted the undamaged spire of the village church—just the place to get some good shots of the action, he thought. Up he went, climbing the inevitable long, spiral stone staircase which gave access to the tower. At the top, he found a perfect position for his camera, behind some *louvres* through which he could train his camera, unobserved, on the town. Glancing down, he noticed a surprising lot of troops in the nearby streets below. "My," he thought, "I hadn't realized we had so many men in the village yet"—and then he noticed that instead of khaki, they wore the German *feldgrau*!

While he was still debating as to whether to stay and get his picture, or leave and retain his health, the matter was decided for him. A sudden *whoosh* like the grandfather of all hurricanes shook the tower. A second later, another—on the opposite side—repeated the performance. A German field-gun had opened up on the advancing Yanks,

its shells passing so close to the tower that the wind of their passage literally rocked its sturdy stone walls! Edouart started down immediately. But, as he says, "the weight of that loaded camera made a mighty unwieldy load, and it wasn't long before my feet slipped. Eighty pounds of assorted camera equipment saw to it that I kept on descending the stairs; only I finished the course in a sitting position—skidding the rest of the way down that long, bumpy spiral on my rear!"

Back in the street, he saw things happening at the far end of the village. The American artillerymen were expressing their disapproval of being pot-shotted at by laying down a creeping barrage—a curtain of high-explosive shells which was steadily advancing toward Edouart. Again he beat a very hasty retreat. "It must have looked funny," he says. "My two men were several yards ahead of me, running for all they were worth, and urging me to stop and get some pictures. I was doing as good a job of sprinting as I could, with that fully-assembled camera banging my back at every jump, but I couldn't catch up with them . . . somehow, you don't give much thought to getting pictures when you see solid stone buildings only a few hundred yards away jumping into the air in small pieces! The next day, though, I *did* get some pictures of Grand Pré: there were hardly two stones left on top of each other after that barrage did its work! I was quite as well satisfied I hadn't stayed to make pictures the day before!"

The division moved out of the front lines just before the Armistice. Edouart—in Paris to see to the development of his films—was "on the spot" for the most riotous of Nov. 11th celebrations, that day in 1918. Not long afterward, Edouart received his discharge from the Army, and was given a lieutenant's commission in the Red Cross as a special cinematographer. Sent to Germany as an official of the Armistice Commission, he had the interesting task of making motion picture records of the demilitarization of much of Germany's military plant and industry before he returned to Paris, and eventually to America, by this time a Captain.

Back in Hollywood, he learned that the studio had kept his old job open for him, but was given strict instructions to take a two weeks' vacation—with pay—before reporting for work. Only a few days of this had been spent, however, before telegrams from Washington and cables from Paris informed him that he was urgently needed to come back to Europe—at any price—to take complete charge of the Red Cross' motion picture work there. At length, persuaded by the offer of a Major's commission and a salary a good deal higher than most studio cameramen in those days received, he assented. Back to Europe he went, to bring order out of the chaos in which the thousands of feet of historical film had been left, and to tour the Balkans and Russia,

filming post-war relief activities.

When he finally returned to Hollywood and civil life in 1921, it was to marry the very charming sister of his closest friend of the Columbia University days, and settle down with his own very successful photographic business. But studio activities soon lured him away from this. The man in charge of making glass-shots at the Lasky studio drafted him into this work, where his knowledge of photography, color-rendition and painting proved invaluable to the making of these difficult shots, which involved photographing a scene through a large pane of glass upon which was painted whatever was necessary to complete the actual portions of the set.

In due time Edouart found himself heading a special department of his own. He pioneered several processes of making composite shots by the complementary-color method. This, in its best-known form, placed behind the actual set and actors, which were illuminated with yellow-filtered light, a blue backing, which was lit with blue light. In the camera, in front of the unexposed negative, was a "key" containing the desired background. This "key" was a motion picture positive, carefully bleached and toned orange. The yellow-lit images of set and actors photographed through this background film as though it wasn't there; but the blue light reflected from the blue backing served to print the yellow-toned background image on the film wherever there was no direct image of foreground set and actors, for the orange-toned "key" absorbed the blue light in proportion to the density of the "key's" image, much as a yellow filter absorbs the blue light from the sky. The result was that the background image, in action, was printed on the film behind the direct image of set and actors, so that the two appeared to have been photographed actually together.

But this process had severe limitations. The camera making the composite shot was rigidly anchored in one position; it could not be panned, tilted or dollied to follow the foreground action. The camera had to be specially adjusted, to permit passing the two films through its aperture. Worst of all, the background was never visible on the set, and nobody—even the cameraman—could be certain of the result until the rushes were screened the next day.

Therefore when the introduction of the first supersensitive panchromatic film, faster lenses and more powerful projection lights made it practical, many of the industry's "trick" specialists began to experiment with a process they'd long visioned—projecting the background-film onto a translucent screen behind the actors, and rephotographing the real and projected images with a foreground camera electrically synchronized with the background-projector. George Teague, at the old Fox Studio, was probably the first to use this process on production ("Just



Imagine"). Edouart was the second to employ it.

Since then, the process has become indispensable in modern production; scarcely a single feature goes out from any major studio without some "process-shot" footage in it. Some involve 75 or 80% of their entire footage in "process."

"Moreover," Eduart says, "producers and directors have constantly pressed us to give them greater scope, through the use of larger and yet larger screens. When the process was first used, a scene inside a closed car, with a screen six or eight feet wide, was something to be happy about. But before long, demand had forced us to find ways of using screens 12, 15, 18 and 20 feet across. But still came the cry for greater and yet greater scope. When we succeeded in using a 24-foot screen, we already had demands for shots that would call for a 36-foot screen. My most recent scenes have made use of twin screens totalling 48 feet in width—and the end is not yet in sight!"

Edouart's success in this work is due to an unusual combination of forward-looking imagination with an absolute passion for precision. You'll see it in the way he plans his shots. Every detail of camera-position and angles, composition and action is painstakingly planned out in advance, even to such minutiae as the lens to be used on the background-camera, its focal length, its focus and its height from the ground.

Edouart likes to point out that these transparency or background-projection shots are very seldom used to "fool" the public—except in such obvious instances as a "trick" picture like "Dr. Cyclops," in which the process, sometimes using a huge screen, sometimes a very tiny one, was used to produce the illusion that some characters had been reduced to very tiny dimensions, while to them normal-sized humans seemed giants. Instead, as he points out, "modern transparency or projected-background process-shots are used to give the public a better show for its money. Today, pictures have to be turned out with a definite eye to economy; and sending a troupe on a distant location, where they may have to wait for weather, and where sound, lighting and other factors aren't under complete artistic and technical control, can become prohibitively expensive. There are increasing restrictions on location-trip, anyway, due to today's wartime conditions.

"So today, the task of all of us, in every studio, who are engaged in this type of work is not to fool the public with camera-magic, but to help make it possible for the studios to turn out better pictures, with less expense and effort, yet with no sacrifice in quality or dramatic scope. Most of us are sincerely anxious to live down yesterday's publicity that branded special-process specialists as camera-magicians. We have a definite job to do, and we're trying to do it as perfectly as we can. The highest praise to any of us is the comment that one of our shots creates

such a perfect illusion of reality that nobody takes it for a process-shot. If we can do that, and at the same time give the public a better picture, made more easily and efficiently than could be done by straightforward methods, we're content that we've done our job well." END.

## "Sounding"

(Continued from Page 266)

screen, and with script and microphone before them. Inside the sound-control booth, Telefilm's sound-man Pete Gioga sat at the mixing-panel of the Berndt-Maurer 16mm. recorder, listening intently to the monitoring loudspeaker to check voice-quality, volume-levels, mike placement, and so on.

The musical accompaniment and sound-effects (also, in this case, from disc recordings) were played on a multiple-turntable reproducer in the sound-control booth, and fed into the recorder's amplifier. Recordist Gioga's task included controlling the volume-balance between this accompaniment and the actual voices.

After a few rehearsals, everything was announced ready for the first take. Since the picture measured slightly over 400 feet in actual length—417 feet, to be exact—and the recorder has a capacity of the standard 400 feet, the recording naturally had to be broken up into several takes. These were spaced so as to begin and end at points where there was a pause or change in the dialog, with transitions in picture and music at the same time.

In practice, this proved very useful, for it is amazingly easy—even with experienced professional narrators or actors—to go through perhaps 390 feet of a 400-foot take perfectly—and then slip up on the last few words! Breaking things down into several takes insures that if retakes are necessary, they'll be easy ones, perhaps for only a single, comparatively short sequence, rather than for the whole reel. It's helpful, too, in cases where your narrator's voice, after many rehearsals and takes, begins to get husky with tiredness or maybe plain nerve-strain.

Wherever necessary, cue-marks were made on the work-print, as, for example, slightly ahead of the fade-in of the opening title, to provide a cue for starting the music, which is supposed to come in in sync with the title's appearance. These marks can be made by punch-marking several frames of picture, or by marking three or four frames with full-frame X-marks with a grease-pencil. Where records are to start at any point other than the start of the recording, a similar cue-mark may be made on the record, using a white grease-pencil, and moving the needle through this white spot so that a very definite starting-groove is marked.

Recorder and projector are kept in step by having both driven by electrically interlocked synchronous motors,

both of which are started from a single master switch under the recordist's hand.

The sound in this instance was recorded on reversal-type sound-recording film, since a positive sound-track image is necessary for making the final print on reversal-type Kodachrome. If the film had been made on black-and-white negative film, or if black-and-white release-prints were to be made from a dupe negative, negative-type sound-recording stock would be used.

After the sound-track film had come back from the processing plant, the various takes were segregated, and the OK'd ones assembled and played back, in sync with the picture, on the recording studio's special film-phonographs, which are essentially sound-film reproducing heads minus any picture-projection mechanism, and driven in absolute sync with the projector in the booth. In some instances, there might be two sound takes both of which were technically good, but which evidence some slight difference (in this instance, one sequence was recorded both with and without a certain sound-effect). Both of these were played back in sync with the picture, and the sound experts decided which of the two was most suitable. Finally, the several takes were completely assembled, and cut to synchronise absolutely with the picture.

Then this sound-track film and the Kodachrome picture-original were turned over to the duplicating laboratory, and in two successive printings, picture and sound-track were printed on a fresh roll of Kodachrome duplicating stock, in sync, but with the sound 25 frames ahead of its accompanying picture, to allow for the spacing necessary between the picture-projecting aperture (where the film must have an intermittent movement) and the sound-scanning aperture (where the film must have a continuous motion).

And then, at long last, the people who had worked so hard to make their picture a success had the thrill of seeing and hearing their picture in its complete form, with full color, background-music and sound-effects, narration and synchronous dialog which seemed actually to have been recorded at the same time the picture was shot, performed with no effort other than threading a single film into a sound-projector, turning a switch and sitting back to see and hear what they had done! END.

## Picnic Scenario

(Continued from Page 265)

shakes him. Joe sleepily comes to. Nancy says: "Cuddles is gone. We'll have to look for him . . ."

CUT TO:

Title: "Cuddles is Gone. We'll Have to Look for Him."

Scene 46-A. (Finish of Scene 45.) Nancy finishes speaking, gets up.

CUT TO:



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*"I can't build a plane myself, but I can buy War Savings Bonds that will help keep 'em flying. That is why I am signed up on the Payroll Savings Plan to invest every dollar possible in Bonds."*

Victor Milner, A.S.C.

*"I've got two darn good reasons for buying all the War Savings Bonds I can afford. First is: We've got to win this war and every dime put into Bonds will help do the job.*

*"Second: Money invested in Bonds is money saved for the future. It doesn't take a diagram to show that an investment which pays \$1.00 for every \$3.00 is worth going for. And if these bonds aren't worth while, I don't know what is."*

Charles Lang, A.S.C.

*"It's time we all chipped in and helped the boys who are doing the fighting in this war. Those of us who aren't in the thing with guns, can certainly get in to the limit in a lot of ways.*

*"The very first way is by signing up to buy Bonds and to keep on buying. "Anyone who thinks it's an obligation is badly mistaken; it's an opportunity!"*

Ted Tetzlaff, A.S.C.

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TREASURY DEPARTMENT

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Scene 47: Medium-shot — Joe and Nancy. Joe yawns violently, not excited at all. Joe points for Nancy to go one way, he'll go the other. They'll circle and meet. Nancy hurries off to left. Joe yawns again, goes over to table cloth, dips finger in jam, and exits right.

**DISSOLVE TO:**

(If you cannot dissolve, fade to, and use title:)

**Title: "Ain't We Got Fun . . . .!"**

Scene 48: Long shot—Cuddles—Pictorial setting, trees, brook, or location available. Cuddles is laughing, clapping hands together, having the time of his young life. Pa and Ma are furthest from his mind. (This shot and others in this sequence are for the purpose of capturing the scenic highlights of your outing.)

**CUT TO:**

Scene 49: Close shot—Cuddles. He is exploring anything at hand that is or is not worth exploring. But, he is having fun . . . !" He moves out of frame.

**CUT TO:**

Scene 50: Medium-shot—Cuddles. Cuddles walks past some bushes and disappears.

**CUT TO:**

Scene 50-A. Insert shot: (This should be some high cliff, high waterfalls; shot of tiger or lion at a zoo and, of course, no other people must be seen, or no bars of cage, and the background must be comparable to where you are shooting. In other words, some "danger" shot or impending danger cuts in here. The editor and director must use this according to good taste.)

Scene 51: Long-shot—Cuddles. Scampers into pictorial shot, romps a bit, then ducks again through bushes and out of scene.

**WIPE TO:**

(If wipe cannot be used, insert this title:)

**Title: "Meanwhile . . . ."**

Scene 52: Medium-shot—Pictorial setting—Nancy (open cold set). Nancy enters through shrubs or bushes. She is slightly disheveled; almost in tears. She calls for Cuddles, then pushes on and disappears in the bushes.

**WIPE TO:**

**Title: "And Still . . . Meanwhile . . ."**

Scene 53: Medium-shot—Cliff as background—Joe. Joe shuffles into scene, hands shoved deep in pockets, every once in a while blasting: "Cuddles . . . !" He stops by cliff, noting it would make a good back of a chair, sits down and leans up against the bank. He sits on a stone, reaches under him for the tormentor, extracts it, and throws it up in the air and back of him. He yawns.

Scene 54: Close-up—Rock on edge of Cliff. A good sized boulder is teetering on edge of cliff. The stone Joe has tossed in the air hits this boulder and it falls downward.

**CUT TO:**

Scene 55: Close shot—Joe. Joe has mouth wide in yawn, when . . . smack! This huge boulder shaves his side and smacks down beside him, inches from his side. He freezes in the yawn, mouth

stays open as his head slowly lowers to where boulder is keeping him company. He snaps jaws shut and starts to rise in a hurry.

**CUT TO:**

Scene 56: Medium-shot—Joe. Joe is in process of rising. He looks to left, then to right, then starts to dash off, falls full length in a cloud of dust.

Scene 56-A. Insert shot, new angle and more dangerous of 50-A.

Scene 57: Long-shot—Cuddles—Different location. Cuddles, away from camera, comes running from distance and full tilt into camera. (His body will be the cut.)

Scene 57-A: Insert shot—Still more intense shot of "Danger" insert.

Scene 58: Long-shot—Cuddles. Cuddles starts at camera, and continues to run, this time away and disappears in bushes away from camera.

**CUT TO:**

Scene 58-A: Insert shot—Close-up and most dangerous shot of the inserts.

Scene 57: Medium-shot—Nancy and Joe. (Open cold) A clearing is seen, nothing else. Then Nancy comes through shrubs or in from left. She stands center. She has been crying. Joe enters on the run. (Coming from the same direction, or moving by camera in same direction as last seen in 56.) He stops beside Nancy, looking back in direction whence he just came.

**CUT TO:**

Scene 60: Close shot—Joe and Nancy. Nancy cries on Joe's shoulder. Joe turns lead toward Nancy, puts an arm around her shoulder and tries to comfort her. Nancy raises her head to Joe and speaks:

**Title: "We Must Go Back to the Car and Get Help . . .!"**

Scene 60-A: Same as 60. Nancy finishes speaking. Joe nods his head, agrees, pats her on the shoulder again, and they start to move right.

**CUT TO:**

Scene 61: Medium-shot — Joe and Nancy. Moving out of clearing and disappearing behind trees, bushes, or what is available.

**DISSOLVE TO:**

(If no dissolve is possible, fade out, then fade in.)

Scene 62: Medium-shot — Joe and Nancy—New location, but near picnic spread. (Moving in same direction as last seen) Joe and Nancy move into scene. They stop center, Joe gestures over his shoulder and speaks:

**CUT TO:**

**Title: "The Picnic Stuff Is Just on the Other Side of the Bushes."**

Scene 62-A: (Same as Scene 62.) Joe finishes speaking and they turn to pass through center bushes.

**CUT TO:**

Scene 63: Close shot—Joe and Nancy. Joe holds back bushes so Nancy can pass. He looks toward picnic spread, gapes, and grabs Nancy by the arm.

**CUT TO:**

Scene 64: Flash close-up—Joe. Joe, mouth open, eyes staring, then he exhales and closes mouth with expression: "Well, I'll be . . .!"

**CUT TO:**

Scene 65: Flash close-up—Nancy. Nancy looks at Joe, then turns head in direction he is looking. She cries for joy: "Cuddles . . ."

**CUT TO:**

Scene 66: Medium-shot—Tablecloth—Cuddles—Nancy and Joe. Cuddles is sitting in the center of the tablecloth. Food is on every side. He has the jar of jam firmly in hand, and what isn't in the jar is on his face. (Nancy enters first, Joe follows) Nancy is almost to Cuddles.

**CUT TO:**

Scene 67: Close-up—Cuddles—Nancy's hand. Cuddles is laughing and smearing jam from jar to mouth. He looks up as Nancy's hand is seen.

**CUT TO:**

Scene 68: (Same as Scene 66.) Nancy plucks Cuddles from the table. Cuddles still hangs onto jar of jam. Nancy takes the lad in her arms and stands up with him as Joe comes alongside.

**CUT TO:**

Scene 69: Low camera-angle—Joe, Cuddles, Nancy. Framed against clouds, tree foliage, if possible, Nancy is too happy to see the little rascal to do anything but hug him. She gets a good quantity of jam on her face. Joe points to Nancy's face and laughs heartily. Cuddles reaches over and smears jam on his father's face.

**CUT TO:**

Scene 70: Close-up—Joe. Jam is spread in profusion over his features. He stops laughing for a moment, then continues his hearty laugh.

**CUT TO:**

Scene 71: Close-up—Nancy. Nancy, too, is laughing, looking her prettiest and with a good quantity of jam on her face.

**CUT TO:**

Scene 72: Close-up—Cuddles. Cuddles, too, is laughing, clapping hands, and can almost be seen behind the mask of jam on his tiny features . . .

**CUT TO:**

Scene 73: (Same as Scene 69.) All are happy, Cuddles is back, then continue to laugh and hold positions . . .

**SLOW FADE TO:**

**Title: "The End."**

## Composition

(Continued from Page 263)

matic film, the yellow canvas of the chair is likely to dominate, because yellow photographs lighter than red—almost white, in fact—and because it is rendered whiter by being in the sun, while the gray rendition of the red dress is toned down by being in the shade.

In Technicolor or Kodachrome this becomes a serious problem. In any process of color photography, red and blue are the dominant colors. Even a little spot of either of them, well in the background, can dominate a scene in which your subject is of a more neutral color. I recall seeing in one fairly recent professional Technicolor feature





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a medium-shot of one of the screen's most glamorous blondes (clad in fairly pastel-shaded clothes) which was badly harmed by the fact that far in the background an unknown and unimportant extra-girl in a blue dress kept dancing by. In another film—an otherwise excellent 16mm. commercial picture—I recall an exterior shot where your attention was pulled forcefully away from the real object of interest by a red Coca-Cola sign in the background, more than a block away! And the editor of this magazine is fond of remarking how, in a test he made years ago of the old 16mm. Kodacolor process, a close-up of an extremely pretty girl was weakened by the fact that in the corner of the frame beyond her left shoulder (and nearly two blocks away) there appeared a bit of a rather brilliantly sky-blue stucco house, just at a point where no sky ought naturally to be! Yet viewed visually, through the finder, there was nothing distracting in the scene! The trouble only showed up on the screen.

A whole book could be written about the uses and dangers of motion. It ought to be, too, for it's the one factor the movie-maker has to contend with that the still-photographer and the painter don't, and which accordingly hasn't been given much attention in print. The basic fact to remember is that motion in itself attracts attention. This is true even in real life; it's doubly so where your view is restricted to the relatively small area of a movie-screen. The faster the movement—up to the point where it becomes photographically blurry—the more strongly it attracts attention. Similarly, a rhythmic movement is likely to draw more attention than a regular one.

A moving object can often draw attention away from a non-moving one, or from one that moves only little, or slowly, even though the latter has the advantage of position, size, and tonal value in the composition. A good example of this is a close-up of a girl standing beside a fountain or waterfall. Unless the girl herself is decidedly animated, the regularly-falling water from the fountain is likely to steal the scene. Even though the girl's face is in the compositionally strongest position, the regular movement of the water is going to draw your eyes away from her, and pull them back again and again.

You can make movement work for you, or let it work against you. Simply see to it that whatever you want to dominate your scene is kept moving somewhat—preferably with a rather regular motion—rather than remaining static. Or, on the other hand, if your chief subject isn't going to be indulging in much physical movement, see to it that you exclude from your shot anything that is likely to move more prominently or more regularly. Getting back to your hypothetical shot of the girl beside the fountain, move in closer, so that you close-up on just the girl, and eliminate the falling water from the fountain!

The illustrations, I think, show some of these points very clearly. If you'll look at the left-hand picture at the top, you'll notice that though it's supposed to be a long-shot of two people, you're really rather more conscious of the fountain in the right foreground. There are several reasons for this. First, the people aren't on or anywhere near the upward left-to-right diagonal your eye follows, and there's nothing along it to re-direct your eye toward them. Secondly, the fountain is not only in the commanding position along that left-to-right diagonal, but is also closer to the camera, and emphasized in tone as well, being inherently light-toned, and strongly sunlit to boot.

In the right-hand illustration, we have the same picture, but the artist has modified it to show how much better a picture the cameraman would have gotten if he had just waited a comparatively few moments, until the natural advance of that shadow in the foreground moved on to throw the large, white expanse of the fountain into shade, subduing its tonal strength.

The other picture tries to hint at the problems of motion in composition. The man is excellently positioned, but his face is necessarily in a lighter tone than the flame of the torch. That flame, though it's in a weak position compositionally, tends to dominate the scene, even in this still. On the screen, in motion, the flickering movement of the flame would almost inevitably dominate the scene. The most effective course would be to show the torch in a fairly long-shot angle, and thereafter, if the man's action and expression are important, cut to closer shots of his face—minus the torch—and perhaps suggest torchlight by casting a fairly flickery, shifting key-light on his face from about the angle you'd expect the torch to illuminate him.

Finally, remember that all of these principles outlined can work together, either to your advantage or against it, as you make them. If they work *for* you, you'll find that composition isn't anything far-off and "arty," but something very practical which will help you make better pictures—every time! **END.**

## Filtering

(Continued from Page 262)

much, though in some cases they may be lightened a bit. The yellow is turned almost white by the relatively increased exposure it gets. The green is decidedly lightened. And the blue and violet are rendered much darker, because they've had less light getting through to give them an exposure.

Next, put on a red filter. You can expect this to hold back all of the blue and violet; to slow up the blue component of the green; and to let the red, orange and yellow rays go through strongly. Figure 3 shows that is precisely what happens. The blue has been turned almost black by the red filter used (a Wratten 25-A), and the violet is very dark, too. The red, orange and

yellow are lightened tremendously. If the film used had been more strongly red-sensitive, or the filter used a deeper red, the red could have been made to photograph so light a gray it would be almost pure white, while the blue would have appeared even blacker.

Now, suppose we want to try a green filter, which some experts seem to think a great deal of. Theoretically, you'd expect it to lighten the green considerably, and to darken both the red and the blue. Figure 4, made with a medium green filter (an X-2) shows that this is precisely what happens.

But say you want to lighten the blue, and to make the red end of the spectrum render unusually dark. What filter would you use then? Well, if a red filter turned blue to black, and made red appear white, why wouldn't a blue filter do just the opposite? It will. A blue filter will render blue and violet almost white, and will make red, yellow and orange come out extremely dark. But a simpler way to get very nearly the same result would be to use some of the old-fashioned "color-blind" film, which is still available as positive film.

From all of this we can establish some very definite facts about filters and what they do. *Yellow filters* will lighten yellows considerably, also orange and green to a lesser extent. They'll darken blues, and leave reds very little changed.

*Red filters* will lighten reds, orange and yellows very greatly, darken blues strongly, and make little change in the greens.

*Green filters* will lighten greens considerably, and yellows as well, but will bring reds and blues to a surprisingly similar shade of dark gray.

*Blue filters* will lighten blue greatly, and may lighten greens that have a good deal of blue in them, but will render yellows, oranges and reds very dark.

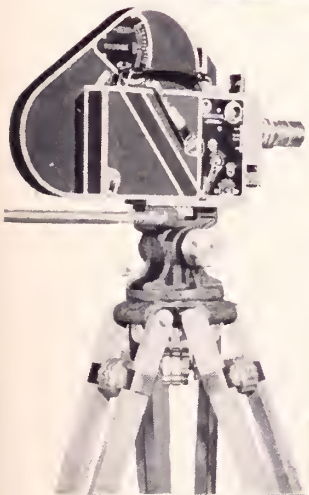
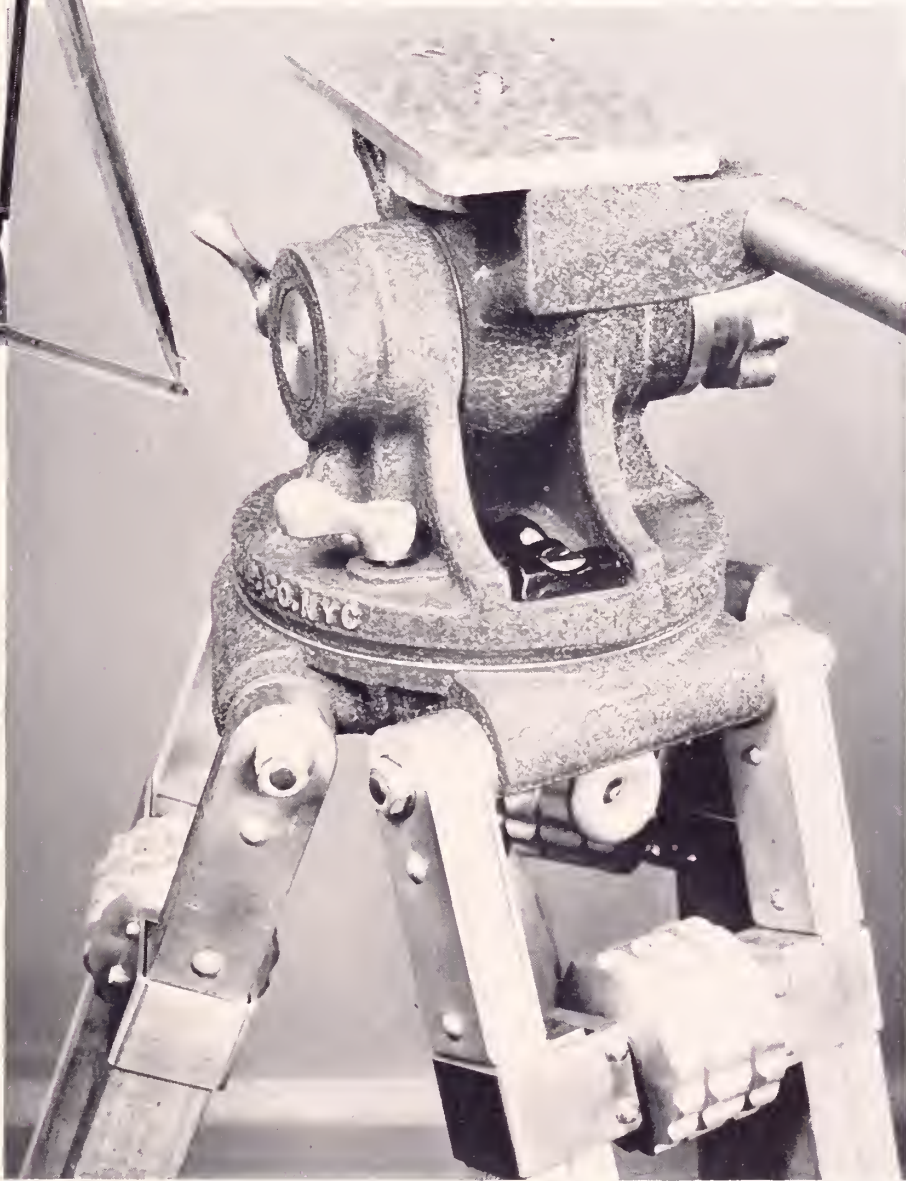
The precise effects will always depend on color-density of the filter you use, and upon the color-sensitivity of the film you use it on. Obviously, you'll get less effect from a light-colored filter than from a deeper-colored one. In the same way, if you've a film that's more than ordinarily sensitive to green, you'll get a lighter rendition of green from any filter that will lighten that color; and if your film is strongly red-sensitive, you'll get a lighter rendition of reds when using a red filter, because you're starting out with a lighter-toned unfiltered rendition of that color to begin with.

In all of this, you'll notice not a word has been said about exposure or filter-factors. That is because these exposure-factors change according to the particular characteristics of the film you happen to be using. For example, the deep red Wratten 29-F filter has a factor of 16 when used on DuPont "Superior 1" negative, which is only normally red-sensitive, yet the same filter, used on the more strongly red-sensitive "Superior 3" has a factor of only 5! Also—within the limits of your film's lati-



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## TRIPOD



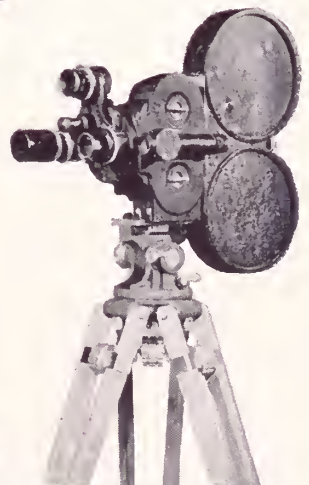
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tude—you can to a surprising degree alter the apparent effect of your filter according as you expose normally, or under- or over-expose slightly. With overexposure, the effect is minimized; with a slight underexposure, it can be surprisingly exaggerated.

Therefore, unless you are going in for highly exacting work, and are a master of filtering and exposure as well, you really don't need many filters. For most practical purposes, you can get all the effects you'll usually want with only two—or at the most, three—filters: a good medium yellow one for most shots, and a medium red one for more heavily-filtered ones. You can add a very deep red one for occasional strongly over-corrected pictorial and night-effect shots with jet-black skies, if you want to; but it isn't really essential.

Every bit as important as knowing how to use filters is knowing when *not* to use them. There are times when the use of a filter will definitely hurt your picture, rather than help it. And there are times when no filter of any sort will do you any good.

For example, it's almost always a good idea to think twice before using filters on shots (other than filtered night-effects) in which there are people. When you're out on a pictorial location, and maybe have a nice sky filled with interesting clouds, I know it's a temptation to slip on a filter that will over-correct that sky and make the clouds stand out for all they're worth. For the long-shot angles, it may be all right to do it: but on the closer shorts, filters that darken the sky and make the clouds stand out prettily will also tend to lighten the face tones of the people. This effect is of course proportionate to the sky-darkening effect of your filter; a heavy red filter, for example, will turn faces chalk-white, and completely remove the lip-makeup of your pretty girls.

In a case like this, it's best to follow the professional's example, and keep your filtering uniformly light all the way through, governing your long-shot filtering by the heaviest filtering you dare use in the closer angles.

There are also times when the best filter to use is—none at all! For example, there are hazy days. Yes, I know that the "experts" say a deep red filter will cut through haze in a long-shot—but they're careful to avoid saying just what kind of haze! Heavy filtering will do a pretty good job of penetrating ordinary distant haze—the kind that veils the extreme distance on clear days. But when it's a water haze, caused by moisture in the atmosphere, which makes the sky appear an indeterminate, whitish gray with only a suggestion of blue, no filter will do you much good. The same thing is true when you're faced with a smoky haze, caused by the smoke of a big city, a forest fire or (here in California) by the smoke-pots our citrus-growers use to protect their groves in cold weather. The air between you and the distance is filled with millions of tiny particles of black carbon (that's

what smoke is, you know), and no mere filter is likely to do the miracle of sweeping that sooty veil aside for you. Yet times without number, I've seen amateurs (and professionals, too!) make a shot under such conditions, screen the disappointing results, and sorrowfully ask, "Why didn't I get my shot—I used a filter, didn't I?"

Another time when filters aren't necessary is when you've nothing in your shot for the filter to work upon. Remember, filters get their effects by lightening some colors, and darkening others. If both of those types of colors aren't present in your scene, you're not likely to get much effect from filtering. And if your scene is composed largely of one type of coloring, which your filter will uniformly lighten or darken, you'll certainly be worse off if you attempt to use a filter.

For example, in many snow scenes, all you have to shoot is white snow and black trees: no filter is going to change this relationship. And if you use, say, a red filter to darken the sky, you'll still have white snow and black trees—with the trees largely lost against the jet-black background of the over-filtered sky. In the same way, in many seascapes your scene is largely blue sky and blue water, extending off to the horizon where they meet. If you use a filter that darkens blue, both sea and sky will darken pretty uniformly; if you use one that lightens blue, they'll lighten together. Either way, you won't get any separation between the two.

Sometimes you'll have a subject in which different parts of the landscape are of different colors which, unfiltered, photograph in different values. If you put on a filter, you are very likely to upset this balance and make both things photograph in very nearly the same tone. The silver-painted air-raid siren against a red brick wall, mentioned last month by Clyde De Vinna, A.S.C., is a good example: shot without a filter, the red of the bricks would come out fairly dark, but photographed with a red filter, the red would render almost as white as the silver paint on the siren.

Out here on our western deserts, we often encounter scenes that are composed largely of yellow or yellow-orange sand and reddish rocks. Photographed without a filter, there's a natural separation between sand and rocks. But put on a red filter—or even one of the heavier yellow ones—and you find the rocks lightening in tone until there's little or no difference in the tone of the rocks and the sand around them.

So, before using a filter, it's always a good idea to analyze the scene before you shoot. Ask yourself "What colors are there in this shot? How will my film render them without a filter? What color-renditions do I want to change? And are there any colors that will be rendered less satisfactorily with a filter than without?" This little mental cross-examination will usually solve your filtering problems. And better than half the time, if you answer your-

self honestly, they'll answer it by advising you *not* to use the filter. When you screen your rushes, you'll usually find it pretty good advice, too. END.

## Projection—Unlimited

(Continued from Page 261)

switches, as in a hall or at top and bottom of a stairway.

Throwing this switch will then stop one projector and start another. By plugging into each outlet an eight and a sixteen projector it is possible to switch between the eights and the sixteens, or any combination of the two by pre-setting the controls on the projectors.

To allow for projector use in rewinding, etc., while one projector is showing a film, a single-pole, single-throw switch, the usual type found in homes, is used to connect the two sides of the control switch, thus feeding current into both of the double outlets simultaneously. When the rewinding or checking is completed, this switch is moved to the "off" position and the switches on the next projector to be used are set so that lamp and motor will turn on when the control-switch is thrown.

The house-lights may easily be controlled where there is fairly regular use of the same room, by a minor alteration to the light-switch faceplate which allows a jack plug to be inserted and a double wire run to the projection-booth, where it is connected across another regular house switch, which may be mounted underneath the projection board. When this switch is thrown to the "on" position the electric circuit is completed through the regular house switch, lighting the room-lights. With this arrangement it is also a simple matter to add a rheostat to the circuit to allow dimming the lights from the booth.

On the projector-shelf four trays should be arranged in which each projector sits snugly, yet which are pivoted to the shelf by a bolt to allow for proper aiming of each projector. For each tray an adjustable stop may be made from a piece of slotted plywood fastened to the shelf by a carriage-bolt and wing-nut, or as we did, utilize four door-stops of the type intended for use on the bottom of a door, having a rubber bumper on the end of a spring plunger to be pushed by the foot so that it is wedged against the floor. These are positive and quick to adjust when used as a stop against the side of the tray. As a further refinement we have placed each tray on four glide casters, and between the tray and the projector-shelf arranged a coil spring with tension sufficient to hold the projector in line against the stop, yet allowing it to be turned for ease in threading or checking.

The completed booth has cost the club about twenty-five dollars, and so far there has been no complaint that the money was unwisely invested. Now, after a smooth, confusion-less show the members in general have agreed that "Yes, something *was* wrong, once!" END.



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## Army Cameramen

(Continued from Page 255)

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"We can teach them the fundamentals of photography—the characteristics of film, development and lenses—the use of such filters as are necessary in field work—exposure both with and without meters—camera-angles and the choice of subject-material—the operation and maintenance of the several types of

35mm. camera equipment the Army uses—the care and handling of equipment and film-supplies under not only normal, but tropical and arctic conditions as well—in short, the basic facts necessary to enable them to do their job in the field.

"While this training plan is being put into operation now at the request of the Signal Corps, we hope that it may also be of service to the Air Force, the Navy, the Marine Corps, and every other branch of our Armed Forces where there is a need for dependable cinematographers." END.

## Professional 16mm. Films

(Continued from Page 254)

tive films, DuPont offers three types, two of which can be used interchangeably as either negative or reversal emulsions, and the third of which, due to an anti-halation backing which can be removed only by the reversal bleaching bath, is exclusively a reversal product. These are the moderate-speed "Superior, Type 314," an exterior film; the considerably faster "Superior, Type 301," an all-purpose "production" film; and the super-speed "Superior Reversal Film, Type 302."

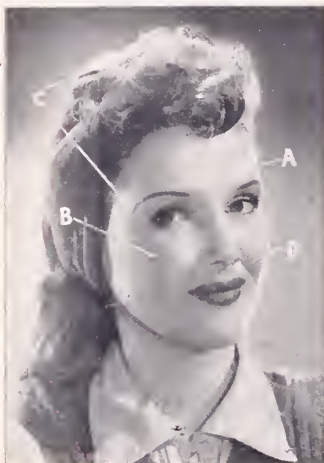
There are many factors which enter into the choice between making 16mm. black-and-white Professional Productions by the negative-positive system or by the Reversal-dupe negative-positive method. Generally, the producer who has specialized in one or the other method will have great praise for his preferred method and will grant little merit to the other method. A careful examination of all the facts will reveal that each method has its good points and a field of use in which it has the edge.

One of the most important considerations in making the choice between the two methods is the purpose to which the completed film will be put. If the film will be used by inexperienced operators in all of the existing types of sound projectors, and will be subjected to continued and hard use over a period of years—and such conditions do prevail in the use of educational films in the classroom—then a primary consideration will be making prints which are standard for existing projectors, which resemble other educational releases as to emulsion-position and which will stand a great deal of wear.

Because 16mm. sound projectors came out at a time when there was little if any "direct" 16mm. production going on, they were designed to handle most efficiently the type of 16mm. film then generally available—i.e. 16mm. reduction-prints from 35mm. originals or from 16mm. reversal originals. The sound optical system was focused on the emulsion-side of the film, which faced the exciter-lamp when a reduction-print was used. The picture aperture was designed so that, in general, bearing surfaces of the machine touched only the acetate base of the film or the edges of the emulsion-side of the film. It has been an accepted fact that the emulsion side of any film is more fragile and susceptible to wear than the film base of cellulose acetate, so it is only natural that projectors were designed to minimize contact with this emulsion side of the film.

Another factor which contributed to this design was the fact that all 16mm. silent projectors were designed primarily to handle reversal originals, which had the same emulsion position as reduction-prints—i.e. had to be projected with the film-base toward the light-

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source. In the conversion to sound projectors, it was natural and easiest to retain the previous design for picture projectors as far as possible, and at least as regards emulsion-position.

This was done and the emulsion-position of original reversals and 16mm. reduction-prints was adopted as the "standard" emulsion position for 16mm. It is important to point out that this "standard" emulsion-position for 16mm. is just the opposite of the "standard" emulsion-position for 35mm., and was agreed upon as a matter of convenience considering the films available at that time.

If a "standard" were to be agreed upon now in the light of several recent technical developments, a more logical choice would probably be a "standard" emulsion-position in 16mm. which is the same as the "standard" emulsion-position in 35mm. The reasons for this are the following:

1—16mm. optical reduction-prints could be made with either emulsion-position, merely by changing the position of the printing negative and re-focusing the optical printer.

2—Kodachrome duplicates at present can be made satisfactorily only from originals and by contact printing. This results in the so-called "non-standard" emulsion-position for Kodachrome duplicates and the consequent greater wear when projected in machines designed for the "standard" emulsion position of 16mm.

If a satisfactory optical one-to-one 16mm. printer is ever perfected, of course, either emulsion-position could be obtained with Kodachrome duplicates. 16mm. one-to-one optical printers have been made, but the results have not been considered acceptable by critical experts in comparison with contact prints.

3—Several new fine-grain emulsions for both picture-negative and sound-negative have been made available in recent years which make direct 16mm. produc-

tion on negative film entirely practical. Of course, 16mm. prints from 16mm. original negatives have the same emulsion-position as 35mm. prints, which is the so-called "non-standard" emulsion-position for 16mm.

Since it is possible that 16mm. negative production as well as Kodachrome production will expand considerably, a revision of these present "standards" might well be considered. The only method of producing 16mm. films which would suffer from such a change in "standards" is the reversal-duplicate-negative method. But if duplicates were made on reversal film instead of from an intermediate dupe negative, these prints would also have the same emulsion-position as 35mm. prints, 16mm. Kodachrome duplicates and negative-positive system prints. This method of duplicating is more expensive, although it gives excellent results and was used exclusively by reversal producers until the development of fine-grain duplicating negative emulsions.

In spite of the above facts, it is very unlikely that any change in projector design will be made at least "for duration," so it becomes necessary for the 16mm. producer to choose a method of production which will give the best results on existing projection equipment. One of the strongest arguments in favor of the reversal system is that it gives prints which are in accordance with the present 16mm. standards. Prints from original 16mm. negatives cannot be made at present in 16mm. standard position. If a one-to-one optical 16mm. printer is made available in the future, it could be used to obtain 16mm. standard prints from 16mm. negatives. Also, if it were possible to make a reversal duplicate negative from the original 16mm. negative, prints from the reversal duplicate negative would be 16mm. standard emulsion position. It is entirely possible that fine-grain reversal duplicating negative emulsions will be available in the future to accomplish this.

Since reversal originals yield prints with standard emulsion-position and hence are subject to less wear, this method of production has a definite edge over original negative-positive system prints when the length of life of prints is a very important consideration. In the battle of Reversal vs. Negative, Reversal seems to have won round one when consideration of emulsion position, wear and sound reproduction on existing projectors are at stake.

With the exception of some of the newest models of sound projectors, the sound optical system of 16mm. projectors has a fixed focus, set to focus the sound image of reduction-prints of 16mm. standard emulsion position. When non-standard prints are used with these machines, the sound image is on the opposite side of the film and is not in the plane of sharpest focus. If the lens system is very critical in its focusing, the sound will in-

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evitably lose some of the high frequencies due to the fact that the image is slightly out of focus.

The Eastman sound projectors, the Bell & Howell, and a few others have a focusing optical system that may be set for either standard or non-standard prints. Since Kodachrome prints are always non-standard, a projector which is used to project both Kodachrome and reduction prints should by all means be equipped with an adjustable sound optical system.

The reversal process by its very nature insures a finer grain-structure than is possible in the negative process. The reason for this is involved in the crystal-line structure of all emulsions-negative or reversal. A negative or a reversal emulsion consists of crystals of silver bromide of various sizes held together in the gelatine of the emulsion. In both emulsions, there are large, medium and small-sized crystals. The large-size silver bromide crystals are more sensitive to light and are effected by the light first.

In development, these larger crystals form the negative image in either negative or reversal films.

In the case of negative films, the smaller unaffected crystals are dissolved in the hypo solution after development, leaving a negative image composed mostly of the larger crystals.

However in the reversal method, the negative image composed of the larger crystals is bleached out after development. The final positive image is composed of the remaining smaller, less sensitive silver bromide crystals which are exposed in the processing machine and then developed. Thus it is inevitable that the reversal image has a finer grain than a negative image.

However, this does not tell the whole story. To get full advantage of the finer grain in the reversal original, fine-grain materials must be used in the preparation of the duplicate negative from the reversal original, and in making the prints from this duplicate negative. If standard positive film is used in printing these reversal dupe negatives, the advantage of the reversal's fine grain may be nullified to the extent that prints from the reversal-dupe negative may have no grain advantage over prints from original negatives. As in 35mm. there are some high-speed negative materials available which will yield an image of finer grain than standard positive film. So, for all practical purposes, if prints are made on standard positive film, the difference in grain-structure between reversal and negative is negligible.

If prints are made on fine-grain positive film, the finer grain-structure of the reversal original will become evident in comparison with prints from original negatives. However, if the original negative is properly exposed and developed, the grain structure of negative-positive prints is very small and by no means objectionable. It is a well-known fact that overexposure can increase grain-size in negative films, so that proper exposure must be watched as closely in negative

films as in reversal films.

It is also known that the type of developer has a great influence on the grain size, and for best results in 16mm. negative work, only true fine-grain developers should be used. Over-development also increases grain size.

One of the principal reasons that negative-positive system production has not been used in 16mm. as extensively as reversal is that most processing laboratories have not given 16mm. negative processing the same care that has been found necessary with 35mm. negative processing, and that is almost always found in the 16mm. reversal laboratories of the major firms. Indifference and careless handling of 16mm. negatives in developing and printing has resulted in a product which was not a credit to producer or laboratory, and gave the film a black-eye it did not deserve. However, the fault was in the handling of the film, rather than in the process itself. With negative processing and printing done by laboratories which specialize in handling 16mm. such as the Precision Film Laboratory in New York, there is no reason why excellent results as to grain, gradation, contrast and cleanliness cannot be obtained.

Negative film definitely has the advantage over reversal film when it comes to latitude—which is another way of saying that negative film is capable of recording a wider range of brightness-values than reversal. In the language of photography, negative film has a longer scale. If negative film is used to record a subject with a short scale of brightness-values, this means that exposure is not so critical—that the photographer can place his scene on the lower, middle or upper part of the film's characteristic curve and still get proper tonal reproduction. This also means that slight errors in exposure are not as serious in negative as in reversal shooting. While, theoretically, it should be possible to get every exposure correct, this does not happen every time, especially when the cinematographer as is so often the case in industrial film production, is performing under pressure.

The definition of just what is meant by a "correct" exposure is of considerable interest. For the reversal process, a "correct" exposure is one which reproduces the tone-values of the original subject when the film is processed without any special adjustment of the processing machine. In theatrical 35mm. practice, a "correct exposure for one studio may be the exposure which reproduces the tone values of the subject when the negative is developed in their laboratory and printed on a certain printer-light about in the middle of the printing scale. For a different laboratory and printer combination, this "correct" exposure might not be at all correct. If the brightness range of the scene is not as large as the brightness range of the film, there may be several theoretically "correct" exposures.

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The extra latitude of negative film may mean the difference between an expensive retake and a satisfactory original take. Negative film is capable of registering shadow-detail much better than reversal and for certain special-effect scenes with low-key dramatic lightings, it renders results which cannot be equaled in reversal.

This is partly due to the fact that reversal films are designed for the amateur and the processing usually attempts to compensate for errors in exposure which amateurs frequently make. This compensation is frequently automatic and is accomplished by a photoelectric cell which regulates the intensity of the exposing light which reverses the image. To the commercial or educational producer, this is not apt to be an important factor since his work is not likely to include production which require much, if any, effect-lighting. (To Be Continued.)

## Navy Films

(Continued from Page 253)

Bureau of Aeronautics to procure that film. If it is a question of procuring that film by having it produced, then we designate an officer to represent the Bureau of Navigation as our expert in the production. This officer then controls the production, working with the commercial producer contracted with through the Bureau of Aeronautics. In a few instances, the films may be made entirely by naval personnel, since many of our enlisted men are being trained as cameramen, and are being used to make films for various purposes not appropriate to civilians.

Individual naval officers at various places have manifested considerable originality and initiative in developing visual aids for specific purposes. I have seen, for instance, a combination of motion picture, film-strip and disc recording, which was used to teach some of the principles of the detection of submarines by underwater sound. I have also seen an excellent sound film-strip on "Man Overboard Drill," made by an officer who teaches seamanship at one of our training schools for young officers. There are other examples of this initiative in the development and use of audio-visual aids. The Aviation Service Schools train the many thousands of mechanics needed to serve our naval aviation, and the officers conducting these schools have developed an elaborate collection of visual aids, motion picture films and film-strips covering almost every subject taught in these schools. They have even developed a series of visual aids which teach the teachers how to teach. This is useful, since many of the men giving instruction in the Aviation Service Schools have not had previous teaching experience, even though they do know their subjects thoroughly.

All the films produced by the Army Signal Corps or by the Research Council of the Academy of Motion Picture

Arts and Sciences for the War Department are reviewed by the Navy, and, if they have an application, are utilized by the Navy. The Navy also uses films produced by other agencies of the United States Government, such as the United States Office of Education. This organization recently produced and is still producing a number of films on machine-shop practices, showing how to use various machine-tools. These have considerable value, and are used in many of our schools.

There are a number of commercial producers of training films, some of whom have produced films on their own initiative or for the use and distribution of large industrial concerns. Many of these films have been evaluated, and some of them are useful to the Navy.

I may add here that where our films are not confidential in nature and may have applications for public use, they are to be made available for public distribution.

There is another source of training film material which has not been very deeply tapped as yet, and that is the enormous amount of films which have already been made in one connection or another, and which, by cutting and splicing and editing, can be made into useful training material. There are a number of films made by the British government for the instruction of the personnel of their armed forces and some of these have considerable value. All of these are evaluated for naval

purposes and the Navy is now using audio-visual aids from all the sources mentioned.

I cannot close this discussion without referring to the contribution of the motion picture to the fourth of the four essentials to victory that I mentioned. You remember that they were numbers of men, equipment, training, and spirit or morale. The United States Navy has never had to worry about the morale of its men, but that does not mean that the motion picture cannot contribute greatly to the maintenance of American

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naval morale. The motion picture show aboard ship is a regular institution, and it is never omitted if it can be helped. This, of course, is for entertainment purposes, but the motion picture now also serves the purpose of giving to the American bluejacket some idea of our allies—the United Nations fighting side by side with us. The motion picture also helps to remind the American bluejacket of the country which is behind him, of the activities of its civilians, and of the other armed forces, and of the outward manifestations of the basic principles of democracy which are fundamentally involved in this world conflict.

So you can see from this necessarily brief discussion that the motion picture is important to the Navy. Those who are important to the motion picture should remember this and help to make that importance greater, more significant and ever more contributory toward our eventual victory.

In conclusion, I should like to leave with you this thought: One of the most important aspects of civilization is the transmission of ideas. The motion picture film is, as you know well, a potent factor in this field. Its use for entertainment has been developed to a very high degree; its use in training and in education is only beginning. And yet the application of the motion picture film to training and to education may in the end be far more important than any of us imagine at present. Even now it may be of vital importance in building the efficiency of our armed forces today; and it can surely play a great role in developing the minds and spirits of young and old in the future.

In the past the motion picture industry has not lent its best brains, its greatest talent, its most creative potentialities to the making of films for purposes of training education. This use of the motion picture film, however, is fully worthy of the closest attention of the ablest technicians and the greatest brains this industry can boast. The rewards may not be measured in dollars to the same extent that the production of films for entertainment may be measured in dollars; but the nature and quality of the contribution made, and the permanent value of that contribution will bring satisfaction which cannot be compared with that of the ephemeral success represented by a "hit." END.

**Animation**

(Continued from Page 251)

picks up will have little problems that are peculiar to itself. It would be impossible to lay down a specific set of rules that would govern procedures on every scene an animator works on. There would have to be as many sets of rules as there have been scenes animated in all the cartoons ever produced. However, there are certain general procedures concerned with animation mechanics and timing that remain constant and applicable to most any animation problem.

The animator becomes pretty thoroughly saturated with the intent and purpose of the scene prior to actual animation, through a meeting with director, in which the story action has been carefully described and timed down to its smallest component. He is provided with the working set-up of the scene by the layout-man, indicating position, size and path of action of the character or characters, and diagrams of camera moves. An exposure sheet (see illustration) is made out, indicating action in relation to the footage of the scene. Of course, drawing numbers and specialized camera instructions are not on the exposure sheet at this point, as these details are added by the animator during the production of the scene.

Before actually starting to draw, the animator will probably sit quietly, deep in thought, going over the action in his mind, trying to visualize it as it will look. Different animators approach the animation of a scene in as many different ways, but one generally accepted procedure is to make a flock of small, rough action poses on a sheet of paper, illustrating the general routine of action. He'll fuss around with these little sketches to get good suggestions for present and future animation drawings, until he figures he has the "feel" of the scene. Then is the time to start animating, laying out the rough key poses of the action on the working layout.

Illustrated are some original animator's roughs that were drawn for a scene in "Bambi," Walt Disney's newest feature. The scene is part of a sequence in the picture dealing with Bambi's misadventures on the icy surface of a pond. The action represents Bambi in the act of responding to his rabbit pal's invitation to join him on the ice, taking off from a small hill and running down toward the pond.

The scene constituted a very simple set-up, with just one character, no dialog, and no camera moves. The action was timed out to take four feet and twelve frames of film, and was laid out on a "free beat" musical tempo, meaning that the animator didn't have to design his action to follow a rigid musical rhythm, but could place the accents of his animation where they would oc-



cur during the natural course of the action.

But before getting into the animation process, time out might be taken at this point to explain about a few of the more technical aspects of animating, in order to give more meaning to the detailed explanations to follow.

Animators work on two sizes of paper, one measuring 10x12 inches, the other about 12½x15½. The smaller is called a "5 field" paper, the larger, "6½ field"—known as such by the largest area that the camera can photograph on each paper. Along the bottom of each sheet are punched five holes, which fit over pegs on the animator's drawing board and are for the purpose of accurately registering drawings through all stages of production. Corresponding pegs are fitted to the inkers' tracing-boards and on the cameras.

The area of the drawing that the camera photographs is called a "field." These fields can vary in size from a close-up to a long-shot. A table of field-sizes has been standardized, ranging from a 2, which covers a very small area on the paper, up to a 6½, which calls for the use of the largest sized animation paper. Most animation is done on the 5 field paper, but the 6½ field paper is used when a larger set-up is indicated as it permits more freedom of action and also lends to the animator's convenience in handling a great many characters in a scene, or in certain complicated set-ups.

Camera moves are termed as "trucks." For the effect of the camera moving toward a character from a long-shot to a close-up, the camera is lowered toward the drawing at a fraction of an inch per exposure, from a large field to a smaller one. For the effect of moving away, the procedure is reversed. By means of a "field chart," on which the various sizes of fields are indicated by number and measurement, the animator can call for a certain sized field at any place on his drawing, to suit the movements of his character, and indicates on the exposure-sheet in the "Camera Instructions" column, the size field he desires, and at what point to start trucking to another field position. The field positions are computed by measuring so many units left, right, up or down from the center of the paper. A camera movement to the right is termed as a move "east," to the left, "west," up from center is "north," and down is "south." All field sizes are judged according to the dramatic and compositional requirements of the action. The animator is careful to maintain a good pictorial balance in his scene by the proper size and placement of the camera-field, and to utilize camera-moves freely and flexibly in following the action.

Sometimes, the camera might be called upon to create certain effects in conjunction with the action, such as the rocking of a boat. In this case, the camera is simply tilted during the process of photographing, at a certain angle to the right or left of center at so

many degrees per exposure. Or, the shattering, earth-shaking effect of an explosion might be created by calling for several slight changes in the position of the camera-field, using only a frame or two of film for each new position. Certain trick speed effects are made possible by the movement of the camera alone; for example, the effect of approaching some object at a rapid rate, from the character's viewpoint. In this case, the camera would start at a long shot, and truck rapidly down toward the background.

It can be seen, in view of these few simple examples, that just about any type of camera move utilized in live-action can be approximated in cartoons. About the only exceptions would be certain types of complicated dolly-shots, involving great changes of background and perspective, such as following a character up stairs, around corners, in and out of doors, etc. Such moves require that various parts of the background change size, shape and perspective during the move, which would mean, in cartoons, that the background would have to be animated in order to accomplish these size and perspective changes. In some instances it has been necessary to animate the background, but the results are seldom satisfactory, as the animation of rigid objects has a tendency to jitter. Besides, it's necessary to paint the animated background on celluloid, the same as any other animation, with flat tones, presenting an effect of pictorial inconsistency with the rest of the backgrounds in the picture which are handled in normal halftones.

Consequently, the tendency is to steer clear of such camera moves when planning the staging of the picture, and it's generally found that the avoidance of such moves doesn't necessarily impose any limitations on the pictorial development of the picture.

Another technical factor for the animator to consider, aside from his drawings, are the various "cell levels" of the scene. A "cell level" can be best explained as follows: the set-up of an animated cartoon while being photographed consists of the background, over which are superimposed four sheets of celluloid with the inked and painted characters on them. The position of each sheet in relation to the background is termed as a "cell level." Thus, the cell on the bottom of the pile next to the background is the 1st level, the one on top, 4th. The purpose of these levels is to provide a convenient way to handle all of the various characters or effects in action in a scene. It's obvious that it wouldn't be practical or even possible to draw all of the action of the average scene on one paper and ink and paint them all onto one "cell." Some action moves entirely independent of the rest, while other elements in the scene can remain static for various lengths of time. So, it's necessary to give each separate action a cell level of its own to operate on.

Of course, in a simple scene, every cell level won't have action on it. In the

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case of just one character, only one level is likely to be employed. However, during the process of shooting the finished scene in Technicolor, four cells are kept over the background at all times, even if only one or two have action on them. This is to maintain an even density of exposure, as the addition or lack of just one thickness of celluloid on the background will darken or lighten it slightly.

It's part of the animator's job to break down the various actions in his scene and consign each to a definite cell level. Action that remains in the background or that works under other action will be put on a lower cell level, and the reverse holds for action that works in front of other characters. Action can move from one cell level to another, but this isn't advisable unless absolutely necessary, as a slight jump in color usually results from the change in level.

If there's some non-moving prop in the foreground—a tree, rock, stump, bush, etc.—behind which the action of the scene works at some time, it is placed on the top cell level and termed as an "overlay." This prop, portion of the terrain, or whatever it might be, is painted in the same fashion as the background, in the same tones and colors, either in oils directly on the cell, or on regular water-color paper, then cut out and cemented onto the cell. The purpose of an overlay is to increase the pictorial effectiveness of the scene by providing it with a feeling of depth and third-dimension. It can also help to "frame" the scene when a good composition is wanted.

All of these various technical factors have to be taken into consideration and allowed for by the animator while working out his action, but they constitute no real problems as they're all part of the routine functionings of modern animation mechanics.

The animator is never obliged to create every drawing that finally constitutes the complete action. Only in certain instances will he even go so far as to make every other drawing. In no case will he ever make a finished drawing, but leaves all his roughs to be "cleaned up" by his assistant. There's a good reason for this, as it would slow him down unnecessarily to take time to finish every drawing and consequently he'd lose some of the spontaneity that's a necessary part of animation.

Usually, he'll draw only the key poses, or "extremes" of the action, leaving the supplementary poses, or "in-betweens" to

his assistant or an inbetweener. These "extremes" represent salient spots in the course of the action where a definite change in the position of the character takes place. They can be many frames or just two or three frames apart, depending on the type of action. These "extreme" drawings, if flipped in their proper sequence, should tell the story of the action in a rough but comprehensive way, without benefit of intermediates.

Some representative examples of an animator's rough "extremes" are illustrated from the Bambi scene mentioned earlier. They comprise exactly 1 foot and 12 frames of film, or what eventually became 17 complete drawings when the roughs were inbetweened and cleaned-up. The action represents Bambi going into a jump forward—showing the act of drawing back, or anticipating the action, then into the first jump.

It might be noted that while 1 foot and 12 frames of film were used for the action, only 17 drawings were necessary to portray it. Not always is a new drawing made for every frame of film. Most action can be successfully handled on "2's," that is, exposing each drawing for two frames of film. The eye can't detect the difference in the case of the average medium-paced or slow action. In the case of very fast action, the drawings are generally shot on "1's"—each drawing exposed for one frame. The reason for this is because, in fast action, the drawings will be spaced further apart than in a slower action, and, if shot on "2's," a slight jerkiness would be apparent. By making an additional drawing, or inbetween, the action presents a smoother effect. Of course, there might be cases where a fast, wild, jerky effect is desired. Then, the action is shot on 2's, or even 3's.

The first part of the action of Bambi jumping—the anticipation—was shot on 2's, but the last part, where the action became faster, was exposed one frame to a drawing.

Illustrated are the animator's original rough extremes of the action—Drawings 49, 55, 61, 71, 73 and 76. They represent his idea of the important poses in the course of the action. All poses between these extremes, Nos. 51, 53, 57, 59, etc., are simply inbetweens—supplementary positions leading from one extreme to the next. The animator just drew the extremes, then turned them over to an assistant to be inbetweened. Of course, he had to indicate on his exposure-sheet how he wanted these extremes timed—how many frames apart they were to be shot.

The assistant spotted his rough inbetweens in correct relation to the pattern of the animator's extremes. This job, while not as creative as the animator's, still calls for a definite ability to analyze action. The rough inbetweens resemble the extremes in drawing style, for the sake of consistency.

When all of the drawings in the scene are completed by this rough inbetween process, the animator sends the whole

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works out to the camera department for a "first rough" test. Even though there is precious little guesswork connected with animation, the animator cannot know exactly how his animation moves until the drawings are photographed on film in the proper timing. Experience and his knowledge of animation mechanics tells him that certain combinations of drawings arranged according to a certain timing will produce certain actions, but each new scene presents new problems, with accompanying elements of doubt as to the exact outcome of the animation. But this element of doubt grows less and less with experience, and the average animator today doesn't find himself too greatly surprised when he sees how his animation looks after the camera gets hold of it.

All animation tests are shot in negative—so that the black pencil lines appear as white on a dark field. There are a couple of good reasons for using negative. For one, the action can be studied quite as well as in a print, and so a great deal of money is saved that would otherwise go towards making positive prints. Another reason is that the white line drawings on a dark background is a lot easier to look at on the screen than the normal black drawings on the glaring white paper. Particularly if these animation tests are looked at for hours at a time, as is the case when they're being checked by the director in a projection room.

The projection rooms in which such tests are looked at are called "sweat-boxes" at the Disney studio. The name has more of a figurative meaning today, but a few years ago the term was literal as well. "Sweat-box" was the title hung on the original room in which animation tests were studied in the old Disney Hyperion Ave. studio, many years ago. It was a closet about three feet wide and six long, in which stood a small projecting Moviola on a stand. The animators would run their tests on this machine for the benefit of themselves and the director, and by the time the animator, the director, the layout-man, a story man and maybe an assistant or two crowded into this space originally intended to house nothing much larger than an umbrella, the name "sweat-box" quickly suggested itself for obvious reasons. Some of these early sweat-boxes could have provided scientists with interesting research material regarding the ability of the human system to function for hours in an atmosphere composed of carbon-dioxide, cigarette smoke, and second-hand oxygen.

More recently, air-conditioning has altered the physical aspects of the sweat-box, but the figurative sense still remains. Particularly if an animator's tests don't look so hot to the director, who is likely to tell him so in no uncertain terms.

The animation tests are cut into test reels, in sync with the sound-effects and dialog. In the sweat-box, these reels can be run at any speed forward or backward for a minute study of the action,

dialog sync, camera moves, etc. All of the elements that go into the picture are checked in this fashion and changes and improvements outlined. Changes in the timing of the action are suggested, scenes are shortened or lengthened to suit, a scene might be added, or one taken out, or even some story alterations instigated. Primarily, though, the purpose of "sweat-boxing" is to check on the animator's work, and to okay it so he can move it one step further through production.

\* \* \*

(In the next installment, further steps in the animation process will be explained—"cleaning-up" the roughs, inbetweening, preparing the drawings for inking as well as other technical details concerned with animation mechanics.)

## Russia

(Continued from Page 249)

ists in the field, as we have done in regard to sound movies.

In the Soviet Union, as in many other countries, we played around with the so-called "three dimensional movies." After experimenting with all the known and unknown methods of screen viewing with special eyeglasses, as for instance the anaglyph method, the polarizing method, eyeglasses with shutters, etc., we came to the conclusion that none of the methods based upon the use of eyeglasses could have any practical application. We would rather equip our theatres instead of our audiences.

The inventor, Mr. S. Ivanov, has made a successful experiment.\* He built a screen consisting of two surfaces: one surface (rear) is a standard movie screen but the other (front) consists of a frame with metal wires spread fan-like from the lower part of the screen. The film is taken with a standard movie camera equipped with a device which divides the image in two, creating the impression of one image, photographed from two separate points, the same as we ourselves look upon an object with two eyes representing the two points. During the projection of the film, the spectator sees a separate image with each eye. A physiological depth effect is obtained, which is what we are trying

\* See AMERICAN CINEMATOGRAPHER for May, 1941, Pp. 212-213.

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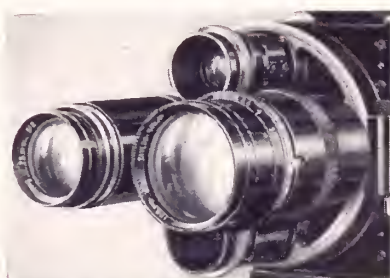
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to create with the three-dimensional films.

A special movie theatre was built in Moscow for showing stereoscopic films without any eyeglasses. The impression was so strong that the spectators forgot they were in a theatre. Just imagine seeing pigeons flying around almost in the middle of the hall or cigarette smoke spreading over your head. Some spectators unconsciously raised their hands to catch the pigeons!

We attach considerable importance to stereoscopic movies without the use of eyeglasses. The work done thus far in this respect is only the beginning.

We believe that Dr. Ivanov's method has a bright future. However, his invention is only in the experimental stages and requires some development to simplify the screen, increase the brilliancy, etc.

We cherish the idea of combining the stereoscopic images on the screen with stereoscopic sound, based upon the developments of the RCA and Western Electric laboratories.

Ten years ago we had about 20,000,000 projection installations and only 2 or 3 percent were sound, but now we have close to 40,000 motion picture installations and 80 percent are sound. These are of a great variety. In addition to regular movie theatres we also have a tremendous amount of portable equipment.

We pay considerable attention to the cultural requirements of our villages. Whatever is done in this respect in our cities is immediately carried out to our villages. Many of the latter are located far from railroad lines so that the equipment, together with the films, must be transported on carts, trucks and special automobiles. For some localities having no electricity, portable power installations also have to be transported.

Each village and collective farm desires its own motion picture installation, and it is quite difficult to satisfy the demand for equipment and films. In order to meet the demand we have a great amount of portable equipment to enable us to transport both equipment and films from place to place.

There are some places in Soviet Union, for example, the Caucasian Mountains, which for certain periods of the year (in winter and early spring), are not accessible either on horses or automobiles. To these places the men and equipment are carried over in planes.

Our Red Army like the movies too. For them we provide special vehicles equipped with motion picture installations, radios, microphones and phonographs. These motion picture vehicles also have special equipment for showing pictures in the military camps in the daytime without the need for darkened places.

The average number of prints made from each new film is from 500 to 1000. And often this amount is not enough and we have to make reprints.

Such a great volume of prints required, made it necessary to prolong

the life of the films. We have developed special treatments for the care of prints, making it possible to show pictures from eight to ten times more than before.

The amplifying and acoustical equipment of our theatres was of an obsolete type which made it difficult to obtain high quality reproduction. Two years ago we designed some modern amplifiers which are now being installed in the theatres.

I believe one of these amplifiers is of particular interest and therefore wish to say a few words about it.

Professor P. Timofeev from Moscow, and engineer B. Kubetzki (Leningrad) have designed a secondary-emission photo-tube multiplier, which has made possible the building of a very compact amplifier. The electronic beam of Professor Timofeev's photo-tube is focused electrostatically. Its sensitivity is about 500 milliamperes per lumen; the noise-level is around minus 55-60 db.; it has an absolutely flat frequency-response curve for the audio frequency range; total voltage applied 500 volts.

This photo-multiplier substitutes the photo-tube and preamplifies. Depending upon the size of the theatre, we connect a corresponding power output stage, usually consisting of two tubes (push-pull circuit). This is a light, compact amplifier, easy to service.

Another important development consists of a high-pressure gas lamp with the following characteristics:

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We have also begun to produce new loudspeakers with permanent magnets, selenic rectifiers, movie screens, and so forth.

In addition to the problems already mentioned, which we have been working on for the last few years, there will be many more to solve in the very near future.

The major and immediate problems to be solved by our institutes, laboratories and factories are: quality improvements in sound-recording, printing, and developing, and further development of color and stereoscopic movies.

I hope you in American industry will continue to help us as you have done in the past.

We are absolutely confident, with the considerable numbers of experienced personnel, and the help of the new powerful Soviet Union industry, we will speedily overcome these problems.

Not far distant that hour when two great nations, the United States and the Soviet Union, will finally crush our common enemies, fighting against them side by side.

Then, under the bright light of new progress, the American and Soviet cinematographers will solve new problems, also working side by side. END.

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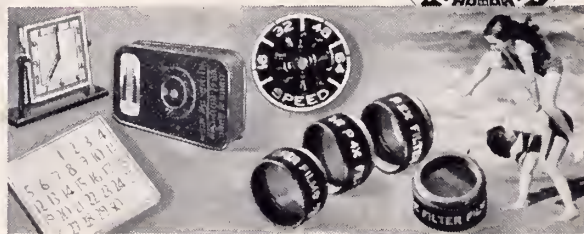


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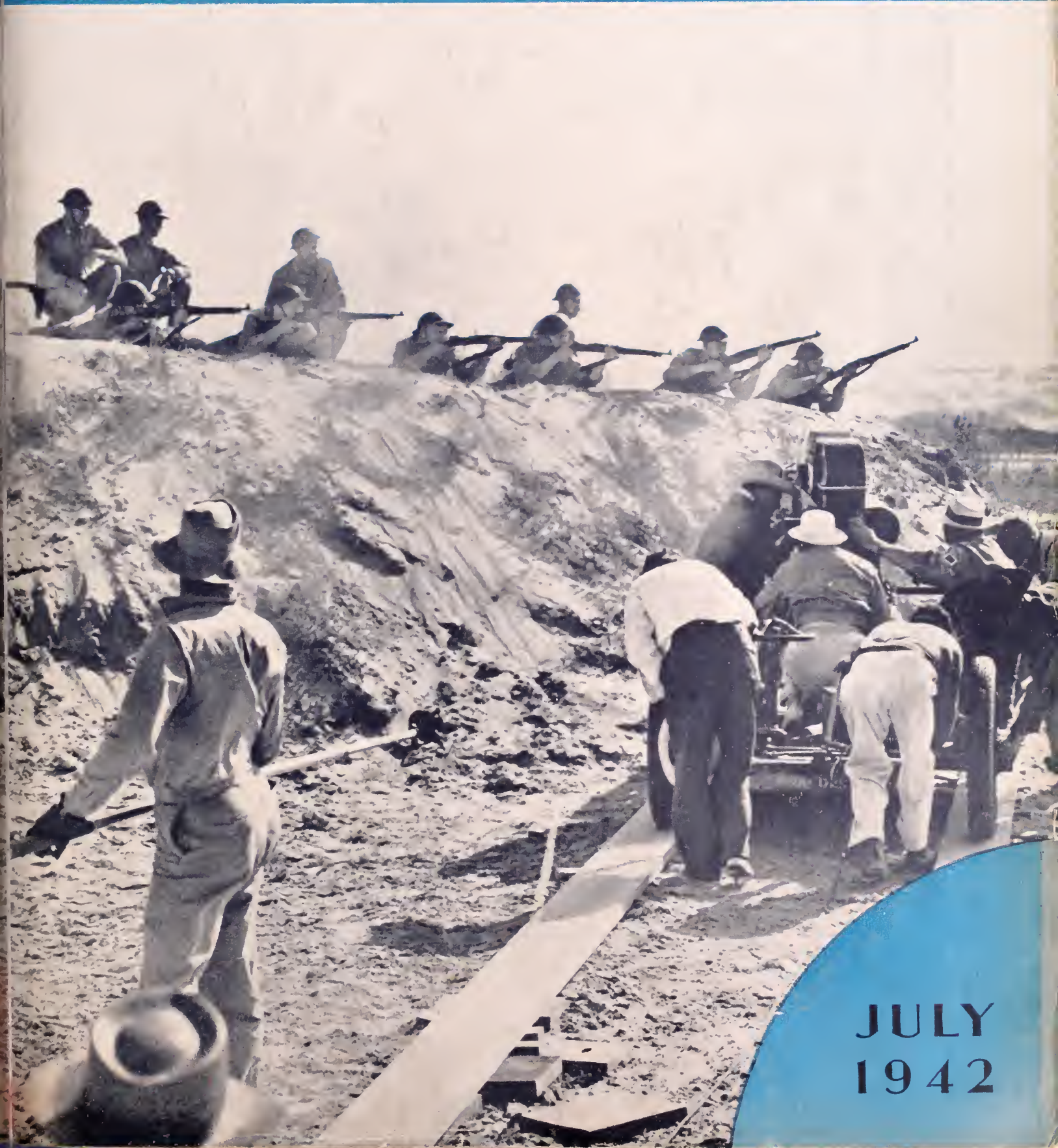


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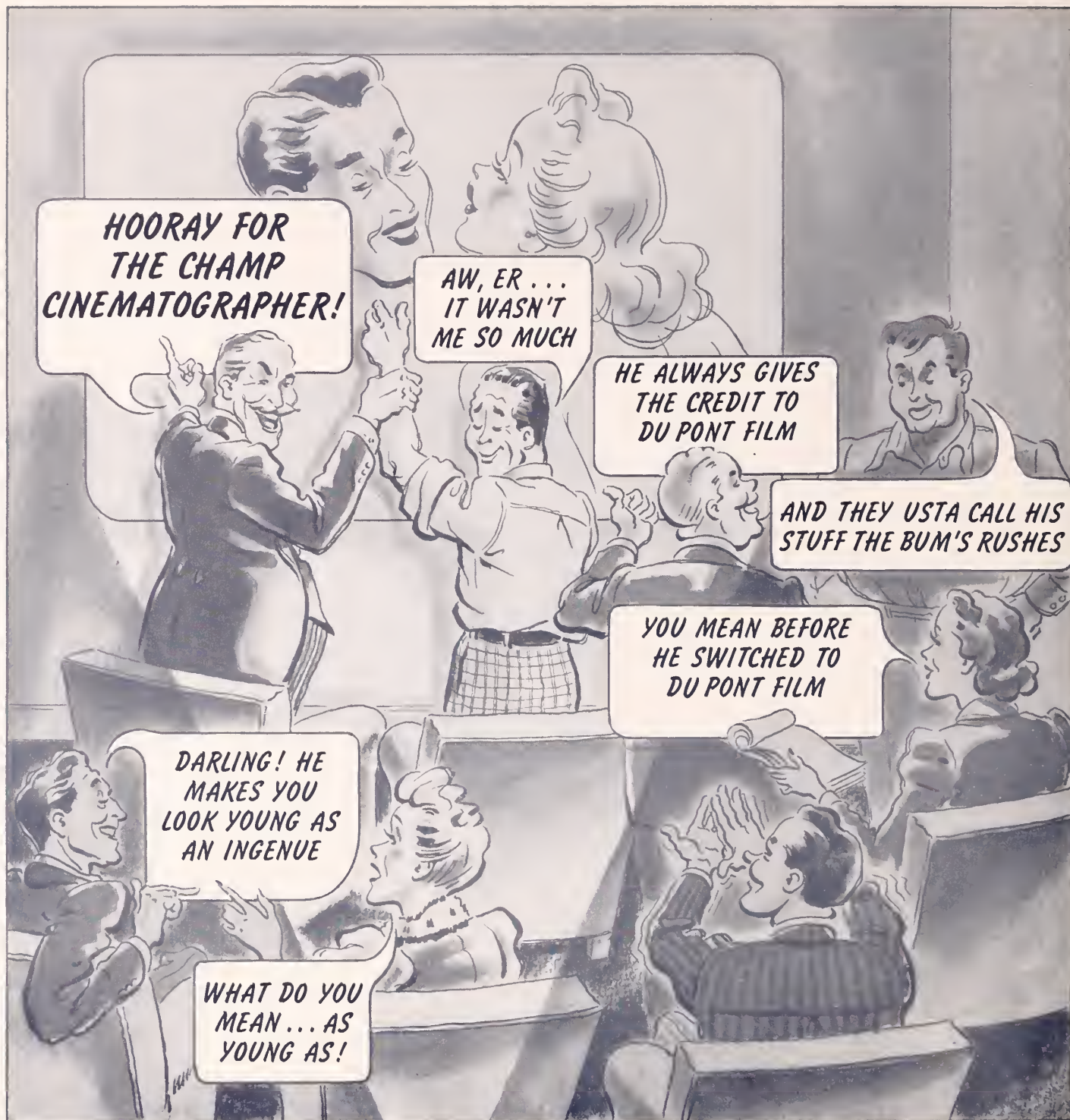
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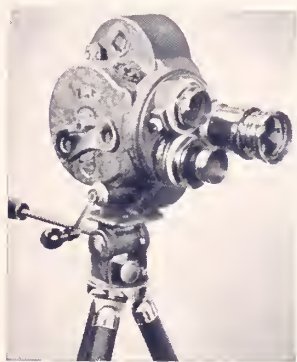
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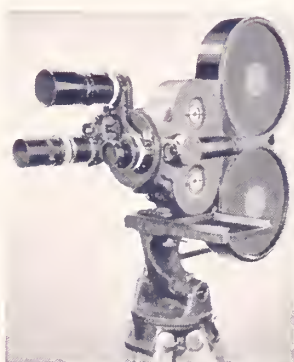


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# AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 23

JULY, 1942

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## The Front Cover

This month's cover shows Harry Hallenberger, A.S.C., (seated on right of dolly, with hand on camera) filming a scene for Paramount's "Wake Island." Notice how planked track for dolly is laid across the sand, and use of microphone on pole held by sound-man to pick up sound of rifle-fire.

Photo by Malcolm Bulloch.





*Photo by "U. S. Army Signal Corps,"*

## Army Signal Corps



*Official Photograph "U. S. Army Air Corps,"*

## Army Air Corps



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# British Film Technicians And The War

By **GEORGE H. ELVIN, F.C.I.S.**

General Secretary, The Association of Cine-Technicians (England).

**S**INCE the outbreak of the war in 1939, Britain's film technicians have faced much the same problems that have confronted their fellow-workers in America since Pearl Harbor. Together, we have a war to be fought and won—a war which calls for the services of our fittest manpower in the fighting services, and in specialized technical branches for which their peace-time technical training may qualify them. In addition, motion pictures—both those produced by and for the Armed Services, and those produced for civilian entertainment as well—are being recognized as increasingly essential adjuncts of the War Effort.

Here in England, the problems have been considerably greater than those yet encountered in Hollywood. The military demand for manpower has been proportionately greater in our country than it has so far needed to be with you; over a third of the pre-war membership of the A.C.T. has gone into the Armed Forces, either by call-up or volunteering. The loss among the other film unions has been at least as high.

On the other hand, the volume of production has increased enormously. The small decrease in feature production has been far more than offset by the tremendous expansion of short-film production for the various Government Departments, the Armed Services, and so on.

Bear in mind, too, that even at its period of greatest expansion, when many key technical and creative posts were filled by specialists from Hollywood, the British Film Industry has never had the tremendous reserve of technically trained manpower you enjoy in America. Capable, experienced technicians we have had; but never have men with ten, twenty or thirty years' experience stood five or ten deep for every available job, as

I understand is the case in Hollywood. Consequently, carrying on this expanded production with our trained manpower drastically slashed, and all sorts of difficulties in the way of obtaining and training replacements, has been a problem which is not altogether solved even yet.

A very important complicating factor has been Government indecision as to whether films were or were not a weapon of war (though our enemies' use of films is some countries, such as Norway, should have given an excellent clue to this), and in consequence, there has been a lack of coherent policy, both as regards the type and nature of films to be produced, and as to keeping available the necessary personnel for making these films. The first two of these factors—the films' part in the war, and the type of films needed—have become a good bit clearer as the war has developed. The latter—manpower—continues to be a difficult problem, as each successive demand for men is made by the Armed Forces. Overall statutory reservation of labor for any industry is largely non-existent now, and an individual case has to be made for the retention of every single technician at his job, as against his call-up for military service.

Naturally, neither the employers nor the unions oppose the industry's yielding up its quota to the Forces. Our one claim is to retain the key technicians and to obtain opportunity to train others, so that we can keep on doing the job we, as civilian producers and technicians, are called upon by the Government to do.

At the present writing, due to the very strong representations made by the A.C.T., the Ministry of Labor has appointed a Manpower Panel, upon which the A.C.T. is represented by its General

Secretary, to survey the industry's personnel needs. After many meetings, this Panel issued a report, accepted in substance by the Minister, which will assure a reasonable nucleus of film technicians and other workers being retained for film production.

This nucleus must, of course, be reinforced by women and other trainees, including men over military age, and young boys well below the lower call-up limits. This is now being done, and women are now doing jobs which have hitherto been exclusively done by men. Sound Camera Operators in the studios, and laboratory printers are just two examples. First preference for such jobs has of course been given the wives of A.C.T. members serving in the Forces. The Association has created a special War Emergency Membership Section in which such technicians are placed. Women trainees are an additional problem since all women under 30 are liable for industrial transfer to the munitions and other key industries.

The laboratories threaten to become quite a serious bottleneck in production. We do not have the number of laboratories you have in America, and the personnel losses of our labs to the Armed Forces have been greater than in the studios, while their work has increased enormously. Women and youngsters have been introduced, but in insufficient numbers. They could not have been introduced in greater numbers, partly owing to the shortage of skilled personnel to train them, and partly because the skilled people remaining have been so busy keeping up production that they have had very little time to devote to training.

But the picture of Britain's film industry in wartime is by no means entirely one of problems. Production, as previous-



ly mentioned, is decidedly up, and the war has brought about many decidedly advantageous conditions. A few of our current entertainment films have no connection with the war, but the vast majority have a war angle. Particularly popular at the moment are films based on war incidents, as for example, "The Foreman Went to France," and "One of Our Aircraft Is Missing."

The British industry today is smaller than it was before the war, but more virile. Just over a third of our pre-war studios are operating—the rest are used for other purposes—but those that are working are operating at maximum capacity; any decrease in feature production is more than offset by a great increase in the shorts field. With all of this, employment is inevitably much more constant than it has ever been. Most of our studios, you know, are "rental" studios, in which several producing companies rent stage space and facilities as they are needed. Most of our film workers now are permanently employed at one studio, if not always by one company. The few who still free-lance have no difficulty at moving straight from one job to another. The fly-by-night "quickie" producer who based his business on cheap labor and long hours and brought such discredit to the industry has vanished.

The benefits of all this show tangibly on the screen. The technical quality of British production is higher than it has ever been in the past. In addition, we are receiving a pleasant surprise in the great success of the younger technicians who have seized their first chance as directors and directors of photography (or "lighting cameramen," as we call them here) and brought a youthful freshness and enthusiasm to our pictures.

Another recent development has brought into being something British film technicians have long wished for—the chance to make their own productions. In addition to making the films for which they are employed, technicians in several studios are starting to make films voluntarily, on their own, as their own direct contribution to the War Effort.

The first of these films (a two-reeler) has just been completed at the Denham Studios. The studio gave the facilities; Kodak gave the film-stock; artists, technicians and artisans gave their services; and the laboratories processed the film without charge. The cost for the other necessary components of the film—set materials, and the like—amounted to less than £500, which was raised in various ways (subscription sheets, raffles, etc.) by the workers themselves. "Our Film," as this first picture is called, deals with the necessity of maximum cooperation between employers and labor in order to ensure maximum efficiency in production, elimination of bottlenecks, and so on. A second film, made similarly by the workers at the Shepherds Bush Studios, is about to go into production.

Another important activity of the

A.C.T. has been that of the Committee recently appointed to study the problems of making production more efficient. This Committee has turned in its first report, which includes recommendations on such matters as making final shooting scripts available earlier to technicians; the suggestion that costs could be cut by providing a period of rehearsal for actors before shooting commences; minimizing the number of sets written into pictures, and a closer exchange of information about sets being constructed by producers using the same or nearby studios; suggesting further investigation into the possibility of inter-studio collaboration in instances where floor space in one may be so restricted as to render difficult the painting of large-scale backings, etc. Other recommendations cover such points as suggesting a more extensive, and coordinated use of process-work, with a recommendation that permanent special-effects departments should form a part of regular studio service; the need for better coordination of stock-shot material and libraries, including in some instances pooling of library facilities, quicker and more efficient filing of material shot for a specific production, but worth preservation as library material, and better organization and staffing of the Ministry of Information's rapidly-growing collection of useful film material; and of course means for better preservation of film—both negative and prints—in such libraries.

Similar recommendations, also growing out of the committee-members' wealth of practical experience, similarly cover the making of short films for propaganda and military instruction. It all boils down to the fact that modern total war demands of its film-makers total efficiency, and a degree of cooperation between the people for whom the films are made and the technicians. Producers on both sides of the Atlantic could save vastly on the time, effort, money and physical construction going into their films, and obtain better pictures into the bargain if they would only give a more attentive ear to the sugges-

tions of their technicians on such points. Since even so tragic an occurrence as a war must bring forth some good fruit, let us hope that the present emergency may result in at least some improvement in this direction!

We have mentioned at the start of this article that over a third of Britain's film technicians have gone into the various military services—the Army, the Navy, and the R.A.F.—where they are serving with distinction not only at home, but in every field where our Forces have been in action.

The first, and smallest group of these are many who joined the Armed Forces in the usual way, by volunteering and call-up. Some of them (mainly the younger ones) are serving at ordinary military jobs, in the usual way. Others (particularly sound technicians) are assigned to special jobs where their peacetime technical knowledge is proving of especial value.

But by far the greater number of our film technical people have either joined or been assigned to their Services' film and photographic units. These include the Royal Naval Film Unit, the Royal Air Force Production Unit, the Army Film Unit and the Army Kinematograph Service (Film Production Unit.) A few (mainly still photographers and laboratory technicians) are on duty with the Services' respective Photographic Sections.

Now (it was not the rule in earlier days) technicians volunteering for service with these units have to do a period—generally three months—of ordinary service to receive the necessary military indoctrination, before transfer to these Film Units. In this connection, it may incidentally be mentioned that our Services' requirements as to age seem to run somewhat differently from what I understand is the case with the U.S.A. Forces, where an upper age limit of 45 is rather rigidly adhered to. With us, the only technicians who are generally barred from the Service Film Units are those under 25 years of age, although there are of course exceptions. Those under this age are called up for and serve in the Armed Forces in the ordinary way.

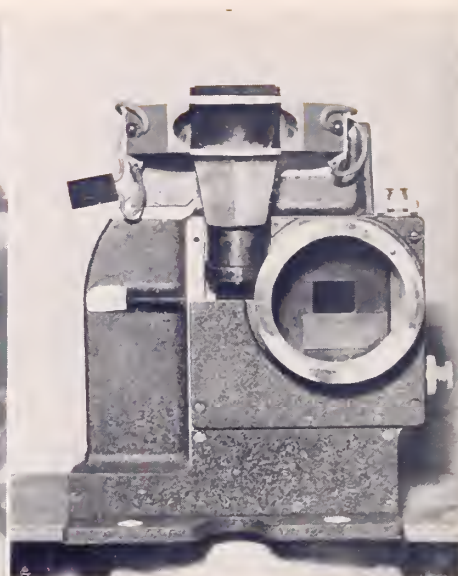
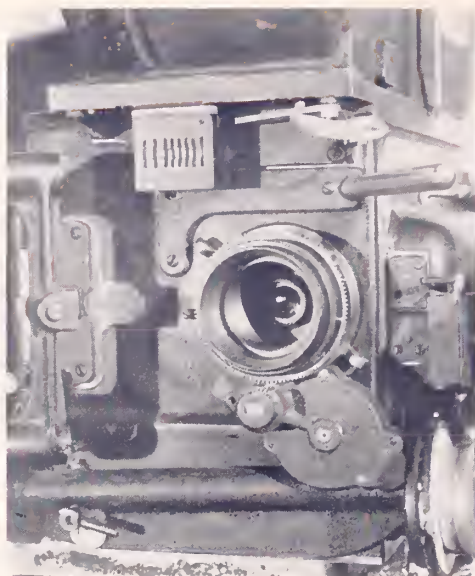
The heads of the respective services are responsible for recruitment of their own film personnel, but close contact is maintained with the A.C.T., and the General Secretary of the Association sits on the Appointments Board which consider applications for transfer to the Film Units. To employ a homely metaphor, it is our aim to fit each human peg into its right-shaped military hole, and we recognize that the mere fact that an individual has had some job in the film industry does not necessarily mean that he would be more useful to the Nation working in a Film Unit than he would be shouldering an Enfield, while on the other hand, other technicians can be enormously more valuable to the War Effort with a camera

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Britain's Army, Navy and R.A.F. Film Units make films for training, propaganda and record purposes. Above: Anzacs in action, from an official combat film.





Mitchell BNC Camera equipped with the new slater; center, data-tablet removed to show dials; right, method of installation. Photos by Bert Longworth.

## WARNERS BUILD IMPROVED SCENE SLATING DEVICE

By WILLIAM STULL, A.S.C.

AS the industry pays more attention to the wartime need for saving film, it seems inevitable that increased use will be made of built-in scene slating devices by which the footage inevitably consumed in bringing the camera up to speed is also utilized to record scene and take numbers and similar important data. During the past year, two such devices have been pioneered and put into use, respectively by Paramount and 20th Century-Fox. A third, and in many ways greatly advanced design has been evolved at the Warner Brothers' Studio, and is now being fitted to that plant's Mitchell BNC cameras.

Outstanding advantages of the new slater include the facts that it is housed directly within the camera; that it is almost completely automatic in its operation; and that it always provides a sharply-focused, full-frame slate, regardless of the lens being used and independent of any filtering or diffusion the cinematographer may employ. While designed expressly for the Mitchell BNC model, which is standard equipment at the Warner Studio, it could, if necessary, be adapted for use with other Mitchell models, though some changes in both slater and camera would be necessary.

The principle of this slater is remarkably simple. It makes use of the fact that in focusing the Mitchell camera, the camera-movement is racked over to the right in order to bring the focusing optical system into place behind the lens. The slater is placed on the right-hand side of the camera-housing, in such a

position that when the camera is racked over, the film-carrying aperture is in position behind the slater's optical system. In use, the camera is simply started in this racked-over position, and held there until up to speed, when it is thrown over to photographing position, and the scene is filmed in the normal manner.

As the camera is racked over to shooting position, the light-source illuminating the slater is automatically turned off. This light-source, incidentally, automatically provides a sync-mark on the picture-film, as when the camera is racked to focusing position, the illumination from the slater's self-contained light-source fogs the frame of film upon which the take starts.

This system is made possible by the fact that the BNC Mitchell is a single-lensed, rather than a turret design, and because the BNC's double-walled self-blipping case affords convenient space for building the device directly into the camera-housing.

At the front of the outer case, directly below the magazine platform, an opening is milled to receive the tablet of the slater. Behind this is fixed a small, front-surface mirror, which reflects the image of the slater's dial downward through a tubular housing which contains the 3" lens which forms the slater's optical system. Beneath this lens, a right-angle prism reflects the image onto the film, passing through an opening cut in the camera's inner housing.

The data-carrying tablet of the slater fits into a dovetailed slide at the top of the assembly. Such data as the produc-

tion number, the date, and the names of director and director of photography are carried on two slips of typewritten cardboard which slide into carriers above and below the scene-numbering dials.

The scene and take numbers, as well as abbreviated notations classifying the scene as a Day Exterior (Dx), Night Exterior (Nx), Day Interior (Di), Night Interior (Ni), or Wild Shot (Ws), are carried on a series of rotating dials. These dials are operated from the opposite side of the slating-tablet, outside the camera. Pilot indications appear on the outside of the slater, so that scene or take numbers may easily be changed without removing the tablet from the camera. As a precaution to assure that the Assistant will take pains to check the slate setting carefully, however, these pilot indications outside appear inverted. They are large enough so that they may be read easily enough if one concentrates on it; but being inverted, it is difficult to read them — perhaps wrongly—at a quick glance.

The slater's dial is illuminated by two small, 18-volt light-globes of the type used on toy trains and the like. They are burned at 14 volts, assuring long life, and are powered from any convenient source of 110-Volt current, either A.C. or D.C., and of course including battery-power for location use. The current is reduced to the proper value through an adjustable resistor built into the camera's case, and by means of which the illumination may be accurately set to predetermined values for any type of film, and for either interior or exterior use. The two lamps, together with a pilot-light mounted at the rear of the camera, are wired in series, so that in the event of failure of either the power-supply or one of the globes illuminating the slater, the camera-operator is warned by the fact that the normally

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## A Boom For Operating Miniature Airplanes

By GORDON JENNINGS, A.S.C.

Head of Special Effects Department, Paramount Studios

**T**HE conventional method of operating miniature airplanes — *i.e.*, suspending it from a carriage rigged to travel on overhead wires stretched across the set—has served excellently for many years, but it has definite limitations, chief of which is that the miniature plane is restricted to travel in a straight course. This did not seem an insurmountable obstacle in normal times, when we could make more or less extensive use of actual aerial scenes with full-scale planes: but today, with wartime restrictions limiting, and in many instances prohibiting actual flying operations, miniatures must carry more and more of the burden of providing aerial scenes for our films. And with the war being fought so largely in the air, this demand is almost certain to increase still more as time goes on.

At the Paramount Studio we are meeting this need by the use of a large boom, specially developed to permit completely flexible operation of miniature aircraft. The boom itself is mobile, and permits making straight "flights" of any duration by rolling the entire device along on its wheeled carriage. The 50-foot boom arm, in addition to being raised or lowered, revolves through a full 360° horizontal circle. In addition, the primary supporting member mounted at the outer end of the boom revolves, and the sub-frame from which the miniature plane is actually supported and controlled also revolves, so that with the possible exception of looping, virtually every evolution of a real plane can be duplicated in miniature. Moreover, control of the miniature plane is considerably more precise than has hitherto been possible by conventional methods.

The development of this device was brought to a head by problems encountered in planning one of our current

productions, "The Forest Rangers." The story deals with the Aerial Patrol Service of the U. S. Forest Service, which makes use of airplanes for patrolling our National Forests, spotting fires, and then often dropping men and equipment for fighting them. The script called for a good deal of spectacular aerial action, including planes flying low over the forest-tops, spotting fires, circling them to determine the extent of the blaze, often flying right through the smoke of the fire, and dropping men and equipment by parachute.

Photographing these scenes in actuality would be difficult, hazardous and expensive. In addition, the Forest Service authorities declined to give permission for this type of flying over the forests. The use of miniatures was the only way we could possibly film this action—and we could not do it in miniature by conventional methods!

Therefore we built this boom so that we could do it. We of the photographic staff of the Special Effects Department outlined what we had to do, and how we thought it could be done, and Ivyl Burks, of the Department's mechanical engineering staff, engineered our ideas into actuality. All of us, including Burks, had for some time been cherishing a dream of a device like this, so it can probably be said that the boom was at least half designed long before a line was drawn on paper.

As will be seen from the illustrations, the boom is based on a sturdy, four-wheeled chassis which carries the tubular supporting member upon which the boom-arm revolves. Suitable bracing is provided to reinforce this upright member, and a wide, semi-circular catwalk is provided for the crew who operate the boom-arm. At the head of this supporting member, the boom-arm pivots, both horizontally and vertically.

The boom-arm itself makes use of a banjo-type truss—the first time, I believe, that this particularly efficient type of construction has been used for such a purpose in our industry. The original design called for all-metal construction, but because of the wartime need for conserving metals wherever possible, airplane-type laminated spruce was substituted, with very satisfactory results. The wooden boom is a trifle bulkier, and may perhaps require a bit more bracing wires than the originally-planned metal construction, but it is strong and rigid, and will certainly last until considerably after the time when we can once more obtain metals for construction of this sort.

At the outer end of the boom, as can be seen from the right-hand picture, is mounted the double assembly which supports and controls the miniature plane. The primary support is a counter-weighted truss of welded steel tubing suspended from a tubular mount, upon which it revolves. At the outer end of this primary support is the carriage which actually supports and manipulates the plane. This in turn revolves about its mounting on the tip of the primary mount, and carries a welded steel frame from which descend the three conventional wires which, attached to the wing-tips and tail of the miniature, make it fly level, climb, dive or bank.

Control of the miniature is in the hands of two operators who sit in bucket seats on a control-platform suspended beneath the boom-arm. By means of automobile-type steering wheels attached to drums upon which the wires supporting the plane are wound, they make it nose up or down, bank, or remain level. Supplementary controls revolve the primary and secondary

(Continued on Page 333)





## Making Documentary Films To Meet Today's Needs

By JORIS IVENS\*

**A**S field after field of productive and creative work respond to the pressure of the all-out war effort, as the need for a record of history-making becomes insistent, the documentary film stands out as an important vehicle through which we can evaluate the quality and intensity of the fight for democracy as well as propagate its tested principles and urgent necessities.

Serious creative workers in the movie industry are turning directly to the documentary, as instance directors Frank Capra, John Ford, John Huston; the story-film itself has begun to show the deepening influence of the documentary method as can be seen in pictures like "Target for Tonight," "The Invaders," and even elements in "How Green Was My Valley."

In view of the ever more important work which lies ahead for the documentary film, I have thought some discussion of my experience and conclusions may be of value. I do not propose them as final principles, but simply as working notes to be used in the light of the reader's own experiences.

The problems of the documentary are too manifold and the processes too complex to be handled by a single man. The director still has responsibility for the film as a whole. Usually his is the initial conception, and his constant concern over all the processes will stamp the film with his personal style.

Nevertheless, the director works with a group as skilled in their functions as

he is in his, and his leadership over them is only temporary. It exists in a realization of his dependence upon them and of the interdependence of the members of his group. An understanding of the relationships within such a group is of vital importance to the profundity and quality of our documentary films. You make a film not by a belt-system, but by team work.

The first days of work on location mark a point for reevaluation. Here is the first clash of fact with the concept written into the script. The director must be extremely sensitive to this clash with reality. In it lie all the several directions (bad as well as good) that his film can take. Your set is the real world, and you have to look all around you before focusing your camera on a corner of it. Even if you wished to keep aloof, life has a way of making your film a part of it. A documentary film about a war, for example, is very closely connected with the mood of the people fighting that war. In China we found that the day-to-day shifts in the political and military situation affected the course of production. In Spain, the same thing—with the additional factor that the enemy regarded a man with a camera as a distant target no different from anyone else.

In general, all large mutual readjustments between the location and the script should be gotten over with in the first few weeks. Once the director and the writer have fixed on the general construction, the line of the shooting must be kept steady. The details must, and will, continue to be effected by the reality of your subject, place and people.

Films on wood sculpture, or on the

operation of a bridge, should have no trouble in touching the reality of their subjects. But films on larger, more important themes, require a deeper approach. For such themes, it is necessary to find the social reality, then find the essential drama of that reality. If this drama can not be made the chief line of the film, another real drama must be found, or it must be compressed into some portion of it. There must be a place in the film for both love and hate. If the essential drama is ignored, your film will lack both color and, more tragically, conviction. To walk deliberately away from this drama is to walk toward formalism, mysticism, harming the work of each member of your group. Only as long as your subject is firmly connected with dramatic reality, can the film you are making develop you and your co-workers artistically.

A word should be said on the interrelations of your working group. A typical crew working continuously on location would include: director, writer, cameraman, assistant cameraman, and business manager. If necessary some of these functions can be held by one person, as a writer-director, or writer-assistant cameraman.

Inevitably this group, even if not ordinarily difficult, are somewhat different when they are on location. They are separated from their friends and wives and ordinary habits. Therefore the director has not only to be an artist, the creative source of the film, and an engineer who can superintend all the various techniques, but he must be a group-leader as well. These four or five people are all necessary and important in the practice of an art, and the director has to realize that in documentary films there is the realistic possibility of every group member particularly the cameraman) moving up into direction soon. Thus he has the responsibility of developing the directive abilities of the group.

The writer of a documentary film should accompany the crew on location. This procedure has been repeatedly proven to me of such value that I now consider it a necessity where the film has

\* Producer-director of "Our Russian Front"; "The Power and the Land"; "The Four Hundred Million"; "Spanish Earth," etc.



an elaborate theme. It is a test of the writer's viewpoint and imagination and is of the utmost importance to the progress of the film. Shaping the constant change of reality into the dramatic structure of the growing work, and becoming interested and involved in social, political and even seasonal changes in the environment—the writer's work is not done till the film is done.

The writer can help the director in the conferences that keep them in touch with the changing situation on location, the home office, and the rest of the world. With the director and cameraman usually dog-tired at the end of the day, prevented from thinking creatively, the writer is depended upon to be their spur, to broaden the film's subject, in drama and detail, while they are all away from the specificity of the camera. Another way in which the writer can help is to become aware of each member of the group as a person, sensing needs and troubles before they are expressed. He must help to keep the group happy, a point which will be understood by anyone who has suffered in doing film work in a glum atmosphere.

On the other hand, the writer is subject to certain difficulties by his very presence on location. A special danger, at the time of the first clashes between the concept and reality, is the temptation to cast aside his literary qualities, relying entirely on the strong visuals around him. This has to be guarded against by the director.

Outside influences affect the cameraman, too, and the director and writer must protect him from everything that makes his job any more physically exhausting than it already is, even to carrying the camera. The cameraman should have an assistant to keep the work moving quietly and to relieve him of technical detail.

The documentary film has one force—individual styles notwithstanding—it is taken on the spot. This gives a convincingness it must always have, and too much emphasis on reenactment can be dangerous. Sixty per cent of an average documentary has nothing to do with non-actors. "New Earth" had none, "Borinage" only two short sequences of reenactment. There will always be certain themes that are best carried out in a purely documentary style, but there are others that demand considerable reenactment, and by reenactment I mean the reconstruction of an emotional situation, not merely the redoing of a familiar act.

And this brings up the familiar question of naturalism. The basic question is not "Is truth depicted?" but, once the truth has been depicted, "Has the truth been made convincing enough to make people want to change or emulate the situation shown to them on the screen?"

On the whole, we all recognize the danger of too much naturalism in documentaries. We are learning to conceive documentary film as an emotional presentation of facts. Therefore we must learn to think of documentary as requiring a wide variety of styles—all for the

purpose of achieving the maximum expressiveness and conviction.

In filming "Borinage" there were instances when the objects in front of the camera were too satisfying esthetically; sometimes the poverty and dirt had tonal values that caught the eye pleasingly. Our job was to prevent the audience from being distracted away from unpleasant facts by agreeable objects. As in music, there is often a need for dissonance in saying (or yelling) what you want your audience to hear.

Here we come to the problem that has attracted and sometimes baffled us for many years: the handling of non-actors. In reenacting a situation with a group of extremely pleasant persons, who for your purposes have become actors, the danger of letting them do what they like, of falling back on pleasant, easy naturalism, is even greater. And as your location work progresses, the non-actors become the central figures in your group, creating problems that temporarily force all the other problems out of your consciousness.

Our "Power and the Land" film presented material that seemed to demand reenactment. The ease with which the subject took shape as soon as we decided on this treatment seemed a sort of proof that we were right. In choosing the people who were to play the roles (of themselves—the farmer as the farmer, his sons as the farmer's sons, etc.) the first visual impression is very important. Casting has its own difficulties, too. A father and son may work well separately, but not at all well when they're together in a scene. To get close enough to these people, to work with them, the director must be sensitive to these relationships.

The writer must employ his imagination to manipulate the real, personal characteristics of the new actors—searching them with seemingly careless observations. He must learn thereby, for example, that the farmer takes special pride in the sharpness of his tool-blades, and therefore suggest a tool-shed scene which will make use of that fact. The key to this approach, I think, is that a real person, playing himself, will be more expressive if his actions are based on his real characteristics.

My experience has been that directions to non-actors who are playing together should usually be given them separately, so that a certain amount of unrehearsed action can be counted upon. To get natural reactions we played tricks similar to those Pudovkin has recorded, and some of them worked. For example, the father was filmed receiving a notification from the dairy that his milk was sour; he expected to unfold and pretend to read a piece of blank paper. But he read instead a startling message from me, complaining about his sour milk in no uncertain terms.

The cameraman has to understand the special difficulties of working with non-actors. The director and the cameraman have to invent dramas, sometimes, to render tolerable the length of time



Above, top: Chinese coolies carrying wounded on stretcher; below, scenes from Ivens' "Spanish Earth." On opposite page, left, Chinese troops advancing; right, Ivens (dark trousers) discussing a scene for "The Four Hundred Million."

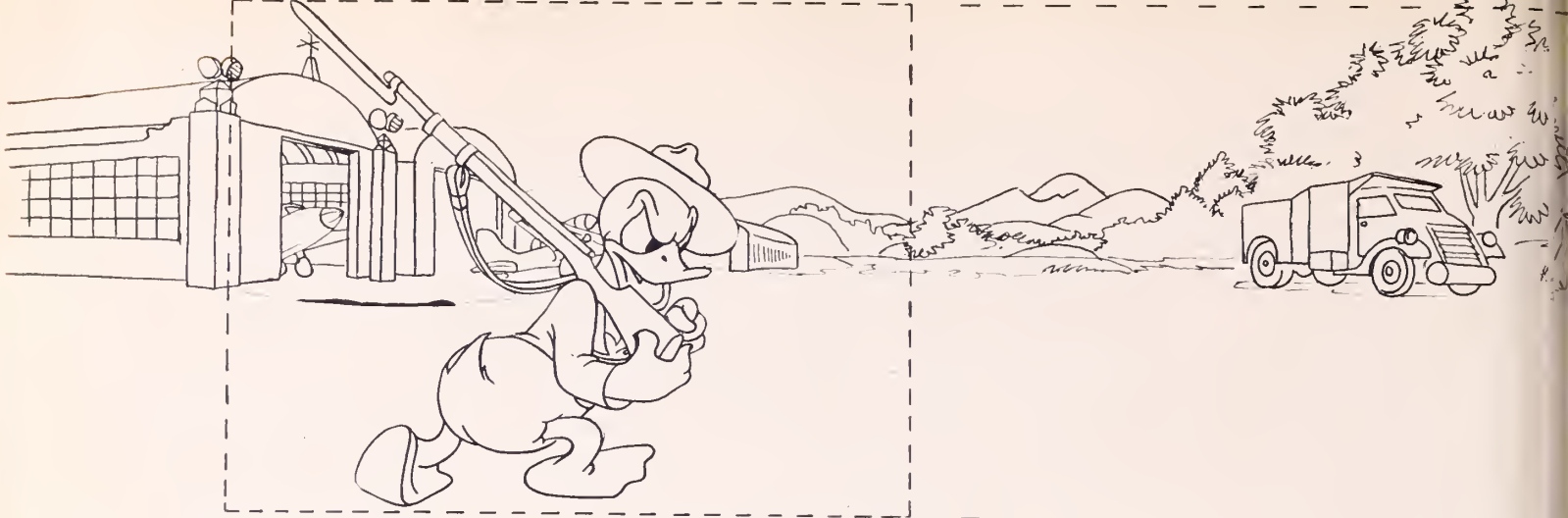
needed for lighting and camera adjustments.

The surest way to avoid loss of time with retakes is to know and anticipate the real movements of the man, to catch the regular rhythm of his normal action (which is far from reenactment). The whole action should be watched (away from the camera) before breaking it up for filming. And the breaking up, and covering, shots should absolutely include beginnings of an action, endings of the action, and the places where the worker rests—not just other angles of the most exciting sections of his movement. Thus you get material for good human editing. Covering shots should also include shots between the close-up and the medium-shot, so as to have within one shot both face and action.

I advise you not to fool with a man's professional pride. Don't ask a farmer to milk an empty cow, even though it's just for a closeup of the farmer's face. He fights such an idea because to him it is false.

Even as simple a rule as "Don't look at the camera" is bound up with the man  
(Continued on Page 332)





2701  
Sc. 3  
Seq. 3

START  
POSITION

# Animated Cartoon Production Today

## Part IV: Cleanups and Inbetweening

By CARL FALLBERG

**T**HE preceding installment in this series followed the procedure of animation up through the creation and photographing of the first rough drawings that illustrated the action of the scene. If the first film test of the rough action looks all right to the director, the okay is given to "clean up" the drawings, preparatory to the processes of inking and painting.

This "cleaning up" involves making the final, detailed drawing that will be traced into the cell by the inker. It's usually done by the animator's assistant, who edits the rough extremes down to a careful drawing, with true shapes, proportions and sizes. Sometimes, however, a cleaned-up drawing has a "tightness" that many animators bemoan, for they feel their first rough has a freedom and spontaneity that is lost as soon as the drawing is reduced down to a form with a single outline. No doubt this is true, but the necessity for cleaning-up the drawings is one of the practical requirements imposed by the assembly-line system of cartoon production. If every line on the drawing didn't mean something and retain a consistency of placement, the inker, when tracing the drawing onto celluloid with a single, hard pen line, wouldn't know exactly what pencil lines to trace in defining a certain form, and the painter wouldn't know the exact limits of the area on which to apply the paint.

Efforts have been made to soften the hardness of the inked outline by using colored inks, and to alleviate the flatness of the painted character by applying tones and shadows by the air-brush or dry-brush method. These measures have

been reasonably successful, but usually involve a great deal of extra expense. Another attempt to remove the curse of the hard ink outline is a special process whereby the pencil drawing is transferred directly onto the cells by photography, for even the pencil outline, uncompromising as it is, has more softness than an india-ink tracing of same.

Illustrated are a series of cleaned-up drawings from the scene in "Bambi" mentioned in the previous installment. Comparing these with the roughs, it can be seen that they are exactly the same in respect to attitude, expression and size, but the cleanup has carried the drawing one stage further along, detailing the character as he will appear on the screen. Incidentally, in this particular scene, Bambi is standing in snow; consequently the cleanups were drawn without feet, which gave the proper illusion of the character standing in snow when the colored cells were superimposed over the background.

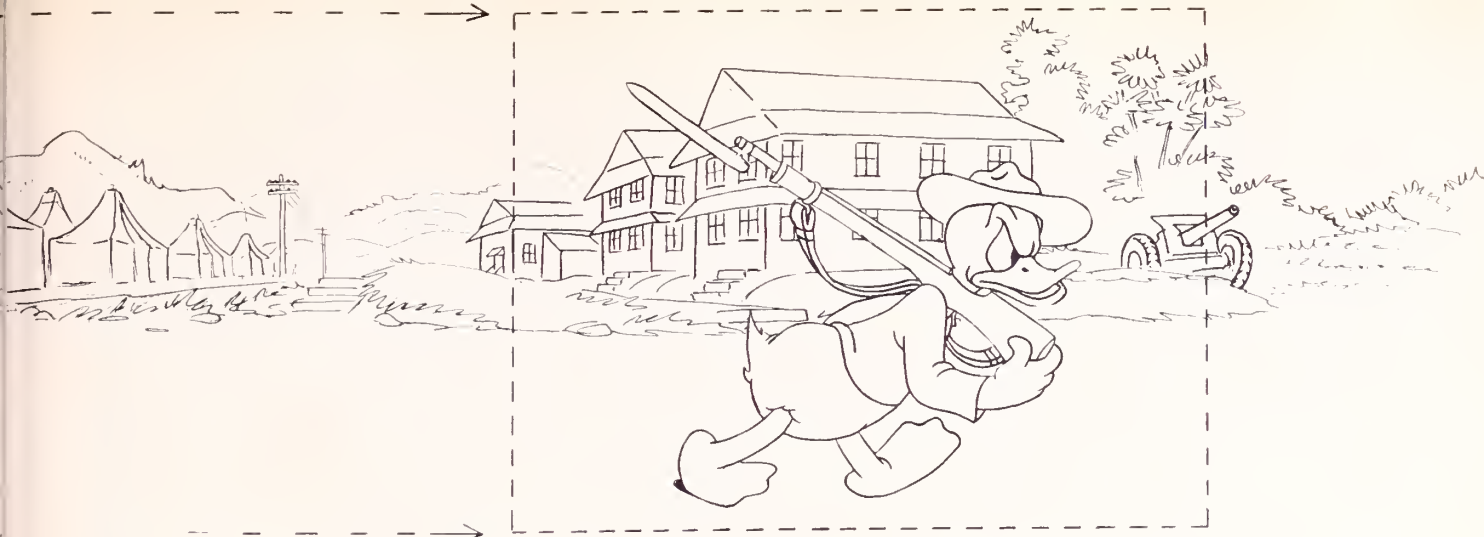
The first drawings that are cleaned up are the original extremes of the animator; so the key action poses become the key cleanups as well. This drawing chore is handled by the animator's assistant, for it is a very important phase in the procedure of animation. The assistant works closely with the animator at all times and is familiar with his way of working. Being an accomplished draftsman, it is the cleanup-man who puts the final screen-drawing into the character. Usually, the assistant is in line to animate some day, and gets a whack at animation in the form of miscellaneous bits that the animator himself doesn't deign to handle.

After the extremes are cleaned up, the supplementary poses, or inbetweens, are taken care of by an "inbetweener", who is the humblest in the long string of artists on the production line. But even the inbetweener must have a better-than-average facility with a pencil and possess a good sense of action for he, too, generally has his eye fixed on an animator's spot.

Every inbetween is a complete drawing, just as finished as the extremes, but it can be seen with a little analytical examining of the illustrations that these inbetweens don't represent any important phase in the course of the action, but simply carry one extreme to the next. The extremes are indicated with an 'x' over the drawing-number. In this case, the animator chose to use every other number in numbering his drawings for reasons best known to himself. But it doesn't make any difference how drawings are numbered, as long as they're in succession and the same number isn't used for two drawings in the scene.

An inbetween drawing is made in the following general fashion. Checking back to the illustrations—drawings 71 and 73 are extremes. Number 72 is an inbetween. The inbetweener first places 71 and 73 on the pegs of his drawing board in superposition, clicks on the fluorescent light under the glass in the board, puts a clean sheet of paper on top of the other drawings and numbers it 72. He then flips the two finished extremes back and forth to get an idea of the path of action. Unless otherwise indicated, the inbetween will be at a half-way position between each extreme. For





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1 5/8 N  
1 1/2 W

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POS.

A "pan" background. Character animates in one spot, while background moves behind him. Dotted lines indicate camera field and path of action.  
© Walt Disney Productions.

example, it will be noted that the spots on Bambi's back are visible in drawing 73, whereas in 71 they are hidden by the position of his body. Hence, in 72, the inbetweener will draw the character so that the spots are just beginning to come into view to the extent of half the amount that's shown in 73.

The inbetweener must be careful to draw everything that's indicated in the cleaned up extremes. If he overlooks a wrinkle, a spot or a color indication, the lack of such will cause a momentary flicker on the screen. When a drawing reaches the stage of being traced onto celluloid, the inker will ink only such lines as are on the drawing. If something's missing, if only for a drawing or two, the inker will automatically leave it out. For all she knows, the cleanup-man wanted it that way.

The inbetweener has the rough inbetween to guide him in placing his finished drawing in the proper relationship to the extremes. These rough inbetweens are done for the first rough test of the action. They help the inbetweener especially when the extremes are far apart, and he is obliged to provide several consecutive drawings instead of just one, as in the case of drawings 63, 65, 67 and 69 which are the inbetweens of the extremes numbered 61 and 71.

Various tricks and time-savers are employed in the drawing of cleanups and inbetweens. There is the "held cell"—used when some portion of a character's body is to remain stationary for 16 frames or longer, while the rest of the body is in action. Instead of redrawing that motionless portion over and over again, it's drawn just once, and placed on a separate cell level. The active parts are animated on another level and superimposed over the held cell, in register. The only possible disadvantage to this method is the fact that the held part generally undergoes a slight change of color, or "color jump", when suddenly transferred to another cell level. Also, holding a held cell for too long a period is liable to present a

"frozen" appearance to the stationary part.

Another drawing-saver is the "trace-back". This is first cousin to the held cell, and is used when but a small portion of a character remains in the same size and position for a few frames. For example, if a character's feet are to remain in one spot for several drawings, while the rest of the character moves, the animator will animate his action as usual, but will fail to draw the feet each time, indicating for them to be traced from the drawing where they went into their held position. The cleanup-man and inbetweener will make their drawings complete except for the feet, calling for a traceback of the feet from the last drawing whereon they appeared.

The traceback is also used to save unnecessary drawing in the case of a cycle of action such as a walk, where the same pattern occurs over and over again. Sometimes, in a cycle, the same drawings are shot repeatedly for the length of the action, but where some part of the character undergoes changes of position while other parts are in a cycle action, the traceback is employed. In a scene from a recent release, Donald Duck is marching along on a parade ground, watching some airplanes overhead. His feet and body go through a cycle of continuous action, but his head moves around, watching the planes. The animator drew a complete walk cycle to animate each foot completing a stride. Then, instead of re-animating these steps for each new stride, the animator called for the use of these original drawings again and again as long as the walking action continued, via tracebacks, in the right order. New animation was done for the head, which changed position constantly during the walk, and which was registered to the tracebacks. The use of held cells, tracebacks and other such shortcuts are encouraged, because every unnecessary drawing is a waste of money, time, and effort.

If there's a portion of the background which a character goes behind, or appears from in back of, he is "registered to the background" during the process of cleaning up the drawings. The exact edge of this part of the background is

carefully indicated by the layout-man, and the cleanup-man uses this guide in drawing only that portion of the character which is supposed to be in sight. Similar guides are provided the inker and painter. If the part of the background is of such a nature as to require complicated registering, such as a wire fence, clump of bushes, etc., it can be handled as an overlay, and placed on a top cell level.

When the action of a character is of such extent as to call for him to move outside of the limits of a 5 or 6 1/2 field setup, a panorama or "pan" move is indicated. A pan move gives the effect of the camera dolly along beside a character in action. The background is designed on a long paper to whatever amount of ground the character is supposed to cover. The cartoon camera is in more or less a fixed position at all times, and its movements are limited to the areas of the 5 or 6 1/2 field. So, when the camera can't move, the background must. In the average pan move, the character animates in one spot on the setup, while the background is moved behind him in the opposite direction at a fraction of an inch per exposure, depending upon the speed of the action.

Pan backgrounds can be designed in a multitude of fashions, to present the effect of most any type of camera move. A vertical pan gives the effect of the camera following action upwards, while a diagonal pan follows a movement up the slope of a hill, or something similarly at an angle. Horizontal pans—most used—present ordinary walking or running actions on a level surface.

Using the multiplane camera set-up, backgrounds can be "broken down" to various levels, with each level being moved at a different speed, for third-dimensional effects. The actual lengths of pan backgrounds are arbitrary, determined in general by the timing allowed an action by the director, and specifically by the animation. All sorts of intricate effects can be obtained by combining various types of pan moves with changes in perspective within the pan, along with camera trucks, overlays, and variously moving background levels. Animation mechanics assume a





"Cleaned-up" drawings representing 1 foot, 12 frames of action, expanded from the six rough extremes illustrated last month. The clean-up versions of these extremes are indicated by an "x" over the drawing number; the other drawings are inbetweens. Drawings 49 to 71 were photographed "on twos" (two frames per drawing) as shown in duplication of No. 49, but the duplicates were eliminated in this reproduction.

more complicated aspect in the case of pan moves, and almost call for the use of higher mathematics when the going gets tough.

However, an explanation of how a simple horizontal pan operates is adequate for the purpose here, and just about covers all of the fundamentals of pan moves. The example in this case is lifted from a current Donald Duck release, "Donald Gets Drafted". The action of the scene has been mentioned earlier in a paragraph dealing with the subject of tracebacks.

Donald is marching along to a definite tempo, taking one complete step on every twelfth frame of film. He is moving from left to right, in a medium shot. He takes ten complete steps in the scene, covering an actual distance of 23 and  $\frac{1}{16}$  inches on the background. But before reaching a conclusion as to the pan length, the animator had to indulge in a little arithmetic. First off, the scene length allowed him was 7 feet and 12 frames, or a total of 124 frames. Donald is marching on "twelves", which gives him time for ten steps, with a few frames left over. For the size that Donald was animated, each step was  $2\frac{1}{4}$  inches long. Ten times  $2\frac{1}{4}$  equals 22 inches, or in footage equivalent, 120 frames. But as the scene is 124 frames long, this is added to the pan, covered by the animation of leading into and out of the first and last steps.

To figure out exactly what fraction of an inch to move the pan for each exposure is now just a little matter of division. However, since the pan is never moved for the first frame of the scene but starts its movement on the second, that leaves just 123 frames, or 123 separate pan moves. The simplest way is just to divide  $2\frac{1}{4}$  inches, the distance of one step, by 12 frames, the film time of the step. The result is  $\frac{3}{16}$ ths of an inch pan move for each exposure. Multiply this by the total number of frames, 123, and the grand total becomes  $\frac{369}{16}$ ths, or 23 and  $\frac{1}{16}$  inches for the length of the pan. Simple, isn't it? Or is it?

Anyway, this gives a pretty fair idea of what the animator has to go through when dealing with pan moves. This example is a comparatively simple one, since there is but one character moving at a constant rate. Complications arise when several characters move at varying rates of speed on different cell levels. However, such problems are but amplifications of the fundamental principles described.

The animation of Donald in his walk took place in one spot on the paper, with each foot, as it remained in contact with the ground, being drawn back just  $\frac{3}{16}$  of an inch on each consecutive drawing, to correspond with the distance the pan moved. So actually, Donald just "treadmilled" in one spot, while the background slid past behind him. Care was taken to see that the change in position of the foot contacting the ground in each successive drawing amounted to no more or no less than the pan move, or else the character would appear to be gaining or losing ground. This  $\frac{3}{16}$  move-

ment, of course, is entirely arbitrary. A pan can move as little as  $\frac{1}{64}$  of an inch per exposure, in the case of an unusually slow action, or can zip past at  $1\frac{1}{2}$  inches for each move, for a fast action.

To give a more realistic feeling of third dimension, a pan background might be broken down into several levels, with each level moving at a different speed. For example, objects in the near foreground appear to be moving faster by the camera than those in the far distance, so the layout-man will design his layout so that the foreground plane can be moved independently of the rest of the background. Thusly, the foreground level might move at  $\frac{3}{16}$  of an inch per exposure while the far level moves at  $\frac{1}{16}$  or even  $\frac{1}{32}$ .

The Multiplane camera as designed by The Disney studio affords opportunities to obtain remarkable results in third-dimensional effects and has opened up new possibilities in the freedom of camera moves. The various background levels are actually separated from each other by several inches, which gives a true illusion of depth to the scene. Action cell levels are spaced accordingly, and great freedom of movement is possible by the action animating from one background plane to another. So far, however, the use of the Multiplane camera has been governed by pictorial rather than action requirements, and has seen its best service in such pictures as "Fantasia", and the forthcoming "Bambi", where backgrounds and scenic effects play an important part in enhancing the dramatic action of the story.

The animation of dialog presents new problems quite different from the animating of straight action, and imposes new demands on the animator's ability to analyze not only action, but emotions, pantomime, and all other basic fundamentals of acting. In the earlier days of sound, a character didn't get much acting into his dialog. It was mainly a matter of opening and closing the mouth, trapdoor fashion. Dialog was generally spoken to a definite rhythm, to fit the musical pattern to which most of the first sound cartoons were animated.

Today, dialog doesn't play a supplementary role, but is an important part of expressing a cartoon character's personality. Great care is used in casting voices for a character. And it works both ways; the animator can oftentimes find plenty of suggestions in the delivery of the dialog to help him in working out the personality of his character. The fine degree to which dialog animation is developed is self-evident in such characters as the Seven Dwarfs, Jiminy Cricket, Timothy Q. Mouse, et al.

The animator's problems in handling dialog are not so much in timing as in drawing and performance. The timing is taken care of by the performer on the sound stage when the dialog is recorded. Dialog is recorded to fit the general timing that the director has allowed the speech in the picture, but allowances are made for the freedom of delivery and natural timing of the actor when speaking the lines. Proper dialog and



correspondingly suitable voices are becoming increasingly important factors in cartoon production, as the continuous development in animation technique makes possible the delineation of finer and subtler characterizations on the screen.

After the dialog is recorded, the animator receives a transcript of it in the form of a "dialog reading". This is a breakdown of the words and syllables of the speech into terms of film footage. The operation of "reading film" takes place in the cutting department. A film-cutter, who specializes in this sort of work, hooks up the length of film containing the speech onto a Moviola, puts on a pair of earphones, and starts running the sound track back and forth, over and over and at various speeds, to familiarize himself with the dialog. He keeps an eye on the modulations in the track, and with a grease-pencil, spots the positions of the words and phrases on the film itself. He then breaks each word down to its syllables and individual letters, indicating the exact length, in terms of frames, of each of these components.

This reading is transferred onto an exposure sheet, with each word, syllable and letter shown in its proper length corresponding to its placement on the film. Variations in volume are even indicated, so that the animator can design the accents of his action accordingly. This same procedure is applied in the case of fitting action to an eccentric sound-effects pattern, only in a more limited degree, as only the main accents of the sound are "read".

An example of a dialog reading is illustrated, along with the actual animation drawings designed to fit the words. The careful manner in which the animator drew the mouth action of the character can be seen by comparing each drawing with its corresponding frame in the dialog reading. The dialog, "The water's stiff!" is used by Bambi's rabbit pal, Thumper, in referring to the frozen surface of a pond. The accuracy with which animators fit their characters to dialog has been shown by the fact that upon many occasions persons who are totally deaf have been able to understand the dialog of cartoon personalities simply by watching the mouth action.

Still another type of animation that has its own peculiar problems is the animation of "effects"—all the non-living, atmospheric material that might have to move in the scene, such as water, dust, leaves, rain, snow, clouds, fire, shadows, and so on. The importance of this type of animation is shown by the extent of its use in "Fantasia", wherein the pictorial and atmospheric components of the scenes often were totally instrumental in telling the story. Effects animators are specialists in that line, and spend as much time in conscientiously analyzing such things as the movements of ripples in water, for example, as a character animator would in studying the movements of a swimming animal creating those ripples. For the sake of

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Above: A "dialog reading" in which recorded dialog is broken down into terms of drawings and film length. Wavy line indicates variations in volume. Right: Actual animation used to portray this dialog. The words "The water's stiff!" are spoken by Thumper, Bambi's rabbit pal, when referring to ice on a pond in a scene from Walt Disney's feature. All illustrations © Walt Disney Productions.

(Continued on Page 331)





# Release-Print Problems In Professional 16mm Production

By JAMES A. LARSEN, JR.

**I**T IS important to consider the conditions under which a film will be shot when choosing between reversal and negative. If lighting conditions are very difficult, if there is no possibility of retakes, and if the cinematographer is working under the pressure of getting out of the way as soon as possible, the negative processes should be favored. Under extremely unfavorable conditions it is possible to vary the development treatment of negative film to partially compensate for unfavorable conditions. There is more control possible in making prints from negatives than in making prints from reversals. In the reversal process, no one sees the film until it has been reversed to a positive and further manipulation of the original is impossible.

Since the entire investment of a production ultimately lies in the picture and sound negatives or originals (if they are reversals or Kodachromes), the protection of this original is of the utmost importance. A properly-handled original negative is probably good for between 100 and 200 prints without showing objectionable signs of wear in the prints.

If the producer knows that he will never need a large number of prints, then one original negative is sufficient. But suppose that over a period of years, 500 or 1000 prints of an original might be needed. With the present 16mm. printers, it would not be possible to make over 200 copies from one negative. The negative would be worn out—that is

abraded, scratched, dirty, perforations, torn, etc.—probably before 200 prints had been made.

However, if the original is made on reversal film, several duplicate negatives can be made from the one reversal original. When 100 prints have been made from one first duplicate negative, it can be discarded and a second duplicate negative can be used. This process can be repeated as many times as necessary to supply the required number of release-prints.

Thus there is no limit on the number of copies possible from a reversal original. Also the existence of several duplicate negatives is additional insurance for the investment in the original. The duplicate negatives can and should be stored in different places, so that if a fire or other catastrophe destroys one dupe negative or even the reversal original, there will still be others to print from.

In 35mm. it has been common practice to make a master-positive or 'lavender' print from which several duplicate negatives can be made if desired. This 35mm. master-positive is kept as insurance against damage to the original negative although release-prints in 35mm. are usually made from the original negative because of the better quality obtainable.

Because of the great volume of prints turned out in 35mm. it has been financially feasible to design production printers which will print 300 or more prints from an original negative without

damage to the original. There is no 16mm. production printer which can do this at present. Also, it has not been possible to make a really satisfactory "master positive" in 16mm. from which duplicate negatives could be made. Although it can be done, the graininess is increased greatly and contrast is increased to an unpleasant degree.

The possibility of making a duplicate negative by the reversal process is one which could hold a lot of promise if film manufacturers would bring out a special emulsion for this purpose. Existing reversal emulsions are not suitable. They increase graininess to a degree which makes contact prints compare unfavorably with prints from original negatives or prints from duplicate negatives made from reversal originals. Making of duplicate negatives by a reversal process, beside giving the desired insurance of more than one negative, would make possible prints with 16mm. standard emulsion-position from films originally photographed on negative film. With the above consideration in mind, it is obvious that the reversal system is better than the negative system if a large number of prints are to be made and if there is a large investment in the original. It must also be pointed out that if only a small number of prints are required and if the likelihood of damage to the original is small, then the negative-positive system is more direct and hence more economical.

In the handling of 35mm. original negatives, ideal conditions for cleanliness prevail. Most negative cutting is done in completely air-conditioned rooms for which the air is filtered and humidified to the proper degree. All workers wear special lintless clothing and handle film only with special lintless gloves. Every conceivable precaution is taken to prevent dust, dirt, lint and other foreign particles from reaching the film.

If all 16mm. original negatives were handled under such ideal conditions it would be possible to get prints from them which would be as clean as 35mm. release prints. However, such ideal conditions are not usually available to the 16mm. producer, and he must frequently handle originals in an ordinary, non air-conditioned room subject to dust, soot, smoke, lint, etc. Despite everything he can do in careful handling, some dust may get on the film and cause specks or spots on the screen.

If the film being handled under these conditions is a negative, dust causes white specks or spots which are quite noticeable on the screen. However, if the original is a reversal or Kodachrome, the dust on the original prints as black specks or spots which are much less noticeable on the screen than white specks.

It is possible by proper handling and cleaning with black velvet to avoid dust on original negatives to the extent that satisfactory prints can be made from 16mm. negatives. This matter of dust

(Continued on Page 330)



# Aces of the Camera

## XIX:

### Stanley Cortez, A.S.C.

By WALTER BLANCHARD



**S**TANLEY CORTEZ, A.S.C., is a young man with ideas. Very positive ones. You may not necessarily agree with them—indeed, he doesn't expect constant agreement with his concepts—but you can hardly help admiring him for having them, and for sticking to them so steadfastly. Having known Stan for many years, I'm quite convinced that if the entire industry lined up and told him his concept of a scene was wrong, he wouldn't admit it until he had proven the question one way or the other, on the screen! Even then, you might not agree with his concept, but you'd have to admit that what he put on the screen was a faithful reflection of the way he saw that particular scene.

This positive attitude has been both an asset and a liability to the Cortez career. An asset because even though he is decidedly one of the younger generation of today's directors of photography, he brings things to the screen with a thoroughly distinctive flavor which is rapidly gaining him recognition as one of the industry's rising young men. A liability because such positivity can hardly help rubbing people the wrong way at times.

He's had another liability to contend with, too, in the fact that he is the younger brother of a successful actor-director, Ricardo Cortez. And when a star's younger brother goes to work as an assistant cameraman, nobody is likely to take him seriously—especially if, like Stanley, he admits to having artistic ambitions.

But Stanley Cortez fooled them. He not only turned out to be a good assistant cameraman, but he made his way up the ladder to the position of operative cameraman. There, he worked with many of the industry's all-time camera aces—Arthur Miller A.S.C., was the first, and Lee Garmes, A.S.C., Hal Mohr, A.S.C., Charles Rosher, A.S.C., Ray June, A.S.C., Ted Tetzlaff, A.S.C., and Lucien Andriot, A.S.C., were others. Working with them, he took what he likes to describe as a five-year college course in

cinematography, learning through practical experience, with the greatest masters of the profession as his teachers. And he built on this foundation with constant study of what other people and other producing centers were putting on the screen, including the highly analytical writings of many Russian, German and French cinematographers and directors whose treatises on the artistic aspects of the cinema seldom make their way into English.

And so it was that some six years ago he advanced to the position of director of photography, becoming a member of the A.S.C. in 1936. And he has steadily battled his way up, first going through the professional "finishing-school" of photographing ten-day "quickies," then getting his chance on program features which might have all of two or even three weeks of shooting lavished on them, and finally, during the past year or so, to "A" pictures. Orson Welles picked him to direct the photography of "The Magnificent Ambersons"; Walter Wanger chose him to photograph the recent—and very difficult—"Eagle Squadron."

His work today combines the effects of his thorough grounding in practical technique, his study of the pictorial and often intricately psychological aspects of cinematography as an art-form, and an

instinctive feeling for the medium with which he works. His mental approach to it is interesting. "When people talk about cinematography as a science," he says, "they are only telling half the story. Dramatic cinematography as we see it in the studios is also an art—and a very largely unexplored psychological medium, as well.

"Let me explain: if we simply set up a camera to make a mechanically accurate record of an action, we are justified in approaching cinematography from a strictly scientific basis. But in a modern production, we are doing two other, and very different, things. We are trying to create a series of visually attractive compositions. And we are trying to produce an emotional or psychological response which will give the audience the 'feel' of the story we are portraying.

"In this work, there is a very definite danger of becoming so engrossed in the technicalities involved that we miss fire on the pictorial and emotional factors which are the heart of our scene. We've all of us seen scenes (not always in short-schedule pictures, either!) in which it was obvious that the man in charge of the photography was so greatly concerned about turning out a negative which would meet the laboratory's technical standards—'print right

(Continued on Page 329)



# A.S.C. on Parade



Among the more notable passer-throughers of the month was **Arthur Arling, A.S.C.**, just promoted to a full Senior Lieutenantancy in the Navy's Photo Presentation Division. It's not official, but we gather Art and his camera were "among those present" at the Coral Sea battle, and have brought the Navy back some sensational pictures.

A cheery note from **Philip M. Chancellor, A.S.C.**—Lieutenant Chancellor, to the Navy delegation—tells us he's been assigned as Photographic Officer aboard the *U.S.S. Hornet*. So far as we can learn, he's the first officer to be assigned for exclusively photographic duties on one of Uncle Sam's aircraft carriers.

**Jack McKenzie, A.S.C.**, beaming with paternal pride on reading trade-paper reports his son, Photographer (2c) **John Patrick McKenzie** distinguished himself at the Battle of Midway Island, serving as the whole camera crew for Commander **John Ford** who, so the report continues, has taken back to Washington some of the most sensational battle movies ever made. They'll probably be released as a special Navy short.

**Charles W. Herbert, A.S.C.**, is now Lieutenant **Herbert, U.S.A.**, of the Signal Corps. We understand he's one of the first cinematographers assigned to the task of filming Major **Frank Capra's** *All-Newsreel*.

**Karl Freund, A.S.C.**, giving MGM Operative Cameraman **Ray Ramsey** an intensive course in using the Norwood meter before Ramsey headed east to become an Air Corps Lieutenant.

Greetings to another new member of the A.S.C.—**Linwood G. Dunn, A.S.C.**, right-hand man to **Vern Walker, A.S.C.**, at RKO, and one of the industry's outstanding masters of the Optical Printer.

And did you know that **Joe Walker, A.S.C.**, recently surprised himself with the results of some tests he made? Seems one day **Joe** couldn't get any models for some technical tests he had to make, and his daughter obligingly stood up and smiled at the camera. And when the Columbia execs saw the results on the screen, their reaction was, "We knew you could get that effect, **Joe**—but who's the girl?" And now there are two picture careers in the Walker family, with daughter working almost as steadily in front of the cameras as Pappy does behind them!

"**Tony**" **Gaudio, A.S.C.**, in the Queen of the Angels Hospital, recovering from an appendectomy. He collapsed on the set with what was at first thought to be intestinal flu, but later turned out to be appendicitis. Pending his recovery **James C. Van Trees, A.S.C.**, is pinch-hitting for **Tony** on "You Can't Escape Forever," meantime joining the rest of us in wishing **Tony** a speedy recovery.

And **Jack Greenhalgh, A.S.C.**, took time out for a lesser carving, shedding his tonsils.

**Ray Rennahan, A.S.C.**, "the old Maestro of Technicolor," gets the plum of solo-piloting Paramount's big special, "For Whom the Bells Toll." He's off for location at Sonora, Calif., where most of the picture will be filmed.

Congratulations to **Elwood ("Woody") Bredell, A.S.C.**, on two counts. Not only has he garnered one of Universal's top camera assignments, directing the photography of the new **Deanna Durbin** picture, but, so we see by the trade-papers, he's shortly due to marry **Miss Violet Kane**. With all those nice things happening to you in quick succession, **Woody**, we hope you're not nervous. Or not too nervous, anyway!

Thanks to **Harry Perry, A.S.C.**, for a nice postcard from New York, where he is bagging special scenes for RKO's "The Navy Comes Through," which, by the way, will have **Nick Musuraca, A.S.C.**, in charge of the production cameras. Of the "great white way," **Harry**, who reached there just as the dim-outs started, writes, "You should see this town now at night! Sure is dark and gloomy! It's lucky we've plenty of 'bright lights' shots of Broadway in the studio libraries, for we sure can't get any more till after the war!"



Last month **Len. H. Roos, A.S.C., F.R.P.S.**, wrote us from Hawaii that he was sending a picture of himself at work as *Pathe News'* accredited war-correspondent. Here it is. The gentleman on the left beaming at **Len** (or maybe just admiring **Len's** snazzy English **Newman-Sinclair Autokinecamera**) is Lieutenant General **Delos C. Emmons**, Commanding General of the Hawaiian Department of the Army, whose planes really gave him something to beam about the way they pasted the Japs off Midway.

**Karl Struss, A.S.C.**, now his chore of Technicoloring "Happy Go Lucky" for Paramount is finished, drops in to collect some of the stamps and censor-marked envelopes we get in from foreign readers and exchanges. He's a philatelist—stamp-fiend, to you.

Wonder why that ardent photographer, **Bert Glennon, A.S.C.**, let his copies of Britain's "Photographic Journal" pile up waist-high in the A.S.C. office without bothering to come 'round for them—?

**Theodor Sparkuhl, A.S.C.**, says the fellows who are skipping tanks around in the Libyan desert this time of year have his sincerest respect—and sympathy. He remembers only too well what a furnace Libya was when he made a picture there in June a number of years ago . . . and inside a tank—whew! says **Ted**, who knows.

**L. Wm. O'Connell, A.S.C.**, goes out to Universal to do the **Gloria Jean** starrer, "Get Hep to Love." Same for **Lester White, A.S.C.**, who moves across town from MGM to The U for "Sherlock Holmes Strikes Back."

**George Robinson, A.S.C.**, handles the effect-lightings for Universal's chiller, "The Mummy's Tomb."

And speaking of chillers (pleasant thought as summer comes on, isn't it?) did you see the nice break **Joe Valentine, A.S.C.**, got in the recent S.E.P. article on Universal's horrorpics?

The **Brothers Jennings**—**Gordon** and **Dev**, both A.S.C.—manoeuvring the Jap fleet in miniature for a scene for "Wake Island," and expressing high disgust as the chemical smoke used to produce an oceanic fog-bank refuses to take direction. They say smoke's the most temperamental "actor" in pictures!



# THROUGH the EDITOR'S FINDER

MODERN war, as one distinguished writer on chemistry once phrased it, consists largely of the explosive liberation of nitrates on a grand scale. And while, chemically speaking, cellulose nitrate in the form of celluloid film-base and cellulose nitrate in the form of guncotton are several chemical steps apart, they both require the same raw materials—cotton and nitric acid.

It has been stated that each 100,000 feet of 35mm. nitrate film is equal to approximately 500 pounds of guncotton. If this is so, the 2,000,000,000 feet of negative and positive film the industry consumes each year is roughly equivalent to 10,000,000 pounds of guncotton, or enough to fill nearly 30,000 500-lb. aerial bombs. This is roughly 50% more than the R.A.F. recently deposited on Cologne in a single raid.

When we consider the world-wide nature of the present war, and its staggering demand for explosives, this total, huge as it may seem, becomes but a virtual drop in the bucket. But we all want to see such raids continue, and grow in frequency and intensity. And whatever any of us can do to assure that there shall be an increasing store of explosives for our airmen to rain on the enemy, we will gladly do.

That is why all of us in the industry are being asked to aid in an "all-out" campaign to conserve film. So far as we have been able to learn, this campaign is wholly voluntary; the film manufacturers give no evidence of being troubled over shortages of materials, and we have been given to understand that if the industry lives up to its past reputation for self-regulation, Governmental rationing of film materials is not likely.

Having thus been put on our honor to reduce our consumption of film to an efficient minimum (we're the only industry, we believe, so honored), we should all of us get whole-heartedly behind any logical move to justify that compliment. We all know that there are plenty of ways in which needless consumption of film can be curtailed. We know there are plenty of slipshod practices, growing largely out of the tradition that "film is the cheapest thing on the lot," which, if corrected, would drastically reduce the industry's consumption of film.

The activities of the several committees and groups studying the problem are not, as yet, nearly complete. We can be sure, from the type of men who make up these groups, that their findings will be constructive and worthwhile.

But as yet, those recommendations have not been issued. And we cannot help urging the industry and its people to regard the situation calmly and sensibly until those recommendations appear. Already, there have been some suggestions made which smack al-

together too much of panic, or of taking unfair advantage of the industry's natural patriotic impulses.

For example, there has been some talk of eliminating all screen credits save those of stars and perhaps some top featured players. If it proves really necessary, and all the other, greater wastages of film have been taken care of, nobody should object. But until this condition applies, it seems to us that the elimination of screen credits is rather like putting a thumb over a half-inch leak in the dyke while gallons roar through a ten-foot hole behind you.

It has been estimated that eliminating all but stellar screen credits would save less than 1% of the industry's annual total of film footage—or enough in a year to load less than 30 bombs. Balanced against this tiny saving are the fact that there are many people who pay their money at the box-office because they are attracted by knowing the film is the work of some featured player, director or cinematographer whose work they admire and follow, and the equally important fact that these credits also have a definite moral effect on the people who make the pictures.

Motion pictures are recognized, officially, as an essential to both civilian and military morale, and as a vital instrument of propaganda for conveying something of the spirit and ideals of our country to the peoples of other nations. If motion pictures are to serve these purposes, the morale of the people who make them must also be kept up.

And that morale will certainly not remain high if our picture-makers see their hard-earned screen-credit being snatched away from them under guise of saving film, while they see many other, and greater sources of film waste in both production and distribution still unchecked!

RECENT trade-paper reports indicate that the motion picture sections of our Armed Services are beginning to discover that in many ways direct 16mm. is more adaptable to their needs than the professionally-accepted 35mm. Some of these news-items hint that the military men who are making this discovery rather feel Hollywood has sold them a bill of goods in its advocacy of 35mm. for their work.

It's too early in the game to chortle "I told you so," even though this writer is one of that Hollywood minority who have long championed the professional possibilities of 16mm., and urged its advantages for military movie-making. But we'll venture a prediction: before this war is over we'll see a majority of our military filming done in direct-16mm., largely because 16mm. equipment and materials are more readily available and more easily used, because more men

of military age can do an acceptable job in 16mm. than in 35mm., and because for instructional and combat camerawork, 16mm. can do anything 35mm. will—and often do it better.

And we'll venture another prediction: as far as motion pictures are concerned, one of the most important technical developments that will grow out of this war will be the coming-of-age of direct-16mm. In fact, we'll be rather surprised if even the studios—so long wedded to the infallibility of 35mm.—don't discover 16mm., too!

AN interesting fact brought to light in our recent Defense Filming survey is the regard our readers have for their magazine. We feel complimented by the number who report they dislike to cut the coupon from their copies, as they file *THE AMERICAN CINEMATOGRAPHER* as an enduring reference-guide. We also feel flattered (though the Circulation Department doesn't!) at the reports we get from many readers that their copy of the magazine passes through many hands in a club, studio or producing organization before it reaches them. When we find that in so many cases a single copy or subscription means not one reader, but several, circulation figures take on an entirely new meaning. Thanks!

EVERY so often somebody remarks to us how lucky they feel the Editor of a magazine like this must be "to see all those previews." Our answer (if we know the speaker well enough to be frank) is usually "well yes—and no."

Personally, we like motion pictures, whether they're professional, commercial or amateur. We like to sit down in a projection-room and watch them unfold, while we study them and try to put our finger on their good and bad points.

On the other hand, though, we try to be honest in what we say about the pictures we see. And that isn't always easy, when you're personally acquainted with the men involved. It's not so hard to say frankly that so-and-so has done a fine job, even if he happens to be an individual we don't get along with so well, because there's the evidence right before us on the screen. But when it's the other way around, and someone who's a particular personal friend turns out a disappointing picture—brother, then's when you wish you didn't have to see the picture or say anything about it!

Luckily, though, there are two factors that tend to make the job easier. First is the remarkably fine way most cinematographers accept what we say about their work, even when we pan it. The other is the way the readers, professional and amateur alike, tell us our comments on pictures guide them in their movie-going. We hope we—and our reviews—will continue to qualify on both counts.



# PHOTOGRAPHY OF THE MONTH

## EAGLE SQUADRON

Walter Wanger Production; Universal release.

Director of Photography: Stanley Cortez, A.S.C.

Special Photographic Effects by John P. Fulton, A.S.C.

Quite apart from having an incredible amount of action crammed into its 109 minutes of running-time, "Eagle Squadron" is one of the most distinguished photographic jobs of the season. With it, one can say that director of photography Stanley Cortez, A.S.C., has definitely arrived as a top-rank cinematographer.

Throughout, Cortez manages a really remarkable blending of realistic and dramatic effects. From start to finish, there are constant cuts to atmospheric scenes actually made in England by uncredited, but none the less extremely capable British cinematographers, both on the ground and in the air. Cortez has handled the California-made scenes intercut with these so expertly that it is almost impossible to tell where one begins and the other leaves off. The picture conveys an unusual impression of the real-life documentary.

At the same time, in the many sequences of intimate action in which dramatic camerawork, angles and lighting are possible, Cortez makes the most of them, yet very seldom overplays his hand enough to disturb the essentially realistic quality the film demands. We personally thought the picture would have been better with fewer low-camera wide-angle shots—but that is a matter of personal opinion with which others might not agree.

In many of the scenes—interiors especially—Cortez makes forceful employment of the so-called "pan-focus" extreme-depth technique. What is more, he does about the best job of it we've yet seen—"Citizen Kane" included. He maintains an excellent balance of lighting and tonal quality (so often missed when this technique is tried), and his three-dimensional compositions are very good indeed: they are natural, dramatically telling, yet never seem to include so many things in so many planes that they confuse the eye.

His handling of diffusion is another commendable highlight. So often, nowadays, cinematographers seem to ignore the maintenance of a proper continuity of diffusion, especially where "pan-focus" long-shots or rugged closer angles of men have to be intercut with close shots of feminine players who need the glamorizing aid of diffusion. But Cortez' treatment of this aspect of the picture is exemplary.

His effect-lightings are excellent, not only in the effect-lighted interiors, but in several really difficult night exteriors representing blackouts and Commando raids. In the Commando sequence, it must be admitted, there were several

cuts which seemed to have been either over-lit or over-printed, but this may have been necessary for dramatic effect.

John Fulton's special-effects work is, as usual, outstanding. Somehow, we're inclined to sense his Transport Pilot's hand behind the treatment of the scenes of aerial battle. He manages to get away from the conventional "Hell's Angels" dogfight treatment, and brings the air battles to the screen in a manner much more authentic for today's 400-mile-an-hour air warfare.

In this connection, an interesting sidelight was brought out by a young R.A.F. Cadet Pilot who was our guest at the preview. Said he, "I served over France and Germany as an aerial gunner on many raids—and never in all of them did I see as many Jerry planes in the air at one time as I did in this picture!"

## TAKE A LETTER, DARLING

Paramount Production.

Director of Photography: John Mescall, A.S.C.

Transparency Process Photography by Farciot Edouart, A.S.C.

"Take A Letter, Darling" is a real cinematographer's job of cinematography—Johnny Mescall at his brilliant best. For good measure, it offers swell entertainment: clever performances, deft direction, and dialogue that makes you wish you'd written it yourself.

Mescall's camerawork in this one should certainly be on anybody's "must see" list. Perfectly keyed to the story's mood of sparkling, polished comedy, Mescall's lightings give a feeling of precision that's hard to describe. You feel as if every lamp were so precisely in its right place that moving one even a hair's breadth, or changing the intensity or diffusion by the slightest touch would be cinematic sacrilege. His compositions are a joy to the eye—pictorially and dramatically effective to an unusual degree.

His treatment of the players matches the rest of his performance; if Rosalind Russell has ever appeared to better advantage, we haven't been privileged to see it.

Another technical highlight of the production is the Transparency process-work by Farciot Edouart, A.S.C., for which, somehow, he neglected to take screen credit. Some of it—as for example the sequence at the kennel—is among the spectacularly best we've ever seen.

## THEY ALL KISSED THE BRIDE

Columbia Production.

Director of Photography: Joseph Walker, A.S.C.

This diverting comedy is, photographically speaking, decidedly an up-and-down job for Joe Walker. On the one hand, he makes Joan Crawford appear to better advantage than we've ever before seen her, and on the other, while he has

some of his typically deft lightings and compositions in the picture, he also has several sequences—like the much-publicized "jitterbug sequence"—which are very decidedly below his usual form. But see the picture anyhow, for it's fine, light entertainment.

## TORTILLA FLAT

Metro-Goldwyn-Mayer Picture.

Director of Photography: Karl Freund, A.S.C.

Here's another picture well worth seeing, both photographically and as entertainment. Spencer Tracy's performance of the shiftless paisano alone is worth the price of admission—even to a deluxe house—and Karl Freund's camera-treatment is every bit as outstanding.

Photographically, it's Freund at his best, but in an entirely different mood from "The Chocolate Soldier." He maintains a really remarkable combination of pictorial effectiveness and unstudied realism. This is all the more remarkable when it is considered that the greater part of the picture—perhaps all of it—was filmed indoors, on the stage. The innumerable process-projection sequences—all too unfortunately uncredited—rate as probably the best we've seen from MGM in many a long moon. The print, by the way, is excellent, one of the very few in which we felt John Nickolaus' pet sepia-toning definitely enhanced the appeal of the picture. Frankly, we'd hate to see a cold black-and-white print of "Tortilla Flat"—though we'd like to see the picture again.

## THIS GUN FOR HIRE

Paramount Production.

Director of Photography: John F. Seitz, A.S.C.

Special Photographic Effects by Gordon Jennings, A.S.C., Farciot Edouart, A.S.C., and William Pereira.

It's been a very long time since any picture has given John Seitz, A.S.C., an opportunity to exhibit his pictorial and technical skill as this one does, and in it, from start to finish, he displays the touch of a master of camera and lighting. The greater part of the action calls for strong, melodramatic lightings. He delivers them with full dramatic and pictorial value, yet never losing sight of tonal balance and quality.

His treatment of the players is characteristically excellent; he presents Veronica Lake perhaps better than we've ever seen her shown before, and to our mind, his treatment of Alan Ladd, the film's much-publicized acting discovery, does at least as much as that young man's admittedly capable performance to make the role memorable.

The triply-credited special-effects work is excellent—so excellent, indeed, that the greater part of it is likely to slip by unnoticed. But don't let the picture slip past you. It's one you ought to see.



## WINGS FOR THE EAGLE

Warner Bros.' Picture.

Director of Photography: "Tony" Gaudio, A.S.C.

Special Effects by Byron Haskin, A.S.C., and Hans Koenekamp, A.S.C.

"Wings For the Eagle" is one of those photographic jobs which is difficult without being obviously spectacular. The accent is on naturalness, amid generally commonplace surroundings. Tony Gaudio's achievement is one of those you're not likely to notice unless you're looking for it consciously: he keeps every scene perfectly in key with its atmosphere and dramatic mood, presents his players to remarkably good advantage, and for the rest, seems to step aside in favor of realism.

Much of the action takes place in the Lockheed aircraft factory; and through the combined skills of Gaudio and process-experts Haskin and Koenekamp, this is done with unusually convincing effect. You are seldom conscious that what you are seeing is process-work, even though you know it must be. But the background of the activities of this, one of America's greatest airplane plants, brings home something of the magnitude of our effort to arm the democracies in the air. The picture is worth seeing for this alone, even if you don't care for the somewhat routine story.

## HENRY AND DIZZY

Paramount Production.

Director of Photography: Daniel Fapp, A.S.C.

"Henry and Dizzy" is an obvious program picture, and doesn't give much opportunity to anyone connected with it. Cinematographer Fapp's contribution was obviously handicapped by a short schedule and the need for maintaining what someone—producer or director—considered proper "comedy camerawork." In addition, we understand there was a last-minute switch in negative materials which placed him at a further disadvantage, and made many of his lightings seem badly balanced. We've an idea Dan can do a great deal better than he was allowed to do in this.

On the other hand, "Henry and Dizzy" has technical interest because of several sequences of photographic trickery for comedy effect. There are more tried-and-true slapstick visual gags in this than in anything we've seen since Fred Jackman, A.S.C., and Mack Sennett parted company years ago. In addition, there's an interesting "chase" sequence, wherein process-projection adds markedly to the comedy-thrill effects, and the nightmare sequence is excellent—and probably the only really imaginative bit in the production.

## THE GAY SISTERS

Warner Bros.' Production.

Director of Photography: Sol Polito, A.S.C.

This isn't one of Sol Polito's best efforts, but he turns in his usual smooth

performance. It's one of those pictures in which the camerawork is so perfectly keyed to the mood of the action that you're not likely to be conscious of it.

But if you take the time to look for it, you'll see that Polito has given "The Gay Sisters" an unusually effective photographic mounting. His lightings and compositions are, as always, excellent, and he has resisted the temptation to over-play low-key effect-lightings, as could easily have been done in this story. His treatment of the players, especially Barbara Stanwyck, is particularly good. We felt Miss Stanwyck appeared to better advantage than in many recent vehicles, and his character-lightings on some of the other players add perceptibly to their performances.

## NAZI AGENT

Metro-Goldwyn-Mayer Production.

Director of Photography: Harry Stradling, A.S.C.

Harry Stradling does a very excellent job on this one, particularly so because of the rather wide range of moods his camerawork must cover, ranging from strong effect-lightings to comparatively high-key effects in the luxurious interiors of the Nazi agent's apartment and office. He deals very well with his players, too.

Conrad's Veidt's dual role is managed by some unusually excellent split-screen camerawork, which in itself is well worth seeing. However, next time we see make-up artist Jack Dawn, we'll have to ask him how he justifies the fact that Veidt, as the peaceful professor, has a distinctly greying beard and hair, yet when he shaves and impersonates his Nazi twin brother, his hair immediately becomes crisply darker, and he sheds many more years than would be explained by simply removing a beard and changing into the diplomat's dapper clothing!

## RINGS ON HER FINGERS

Twentieth Century-Fox Production.

Director of Photography: George S. Barnes, A.S.C.

This picture seems to be something of a routine potboiler for two of our favorite picturemakers—director of photography George Barnes, A.S.C., and director Rouben Mamoulian. Neither one has much chance to show his really original style in this filmization of story—formula 14-b. Of course, neither does badly, but the result is still pretty routine. Barnes handles the photographic presentation with his usual skill, but there are few demands made on his artistry. He does, however, give Gene Tierney some of the best photographic treatment she's ever enjoyed in monochrome, subordinating her occasional unfavorable angles and mannerisms more than we've previously seen, and enhancing her many good ones. Mamoulian now and then gets a flash of his usual camera-minded direction, as in the sequence where the two leads meet. But for the rest, it's pretty routine.

16  
MM

BUSINESS  
MOVIES

## THE INSIDE OF ARC WELDING

Technical-educational, 400 ft. Kodachrome, sound.

Presented by General Electric.

Produced by Raphael G. Wolff Studios. Direct-16mm. recording by Telefilm.

Every producer of 16mm. business-films ought to see this, the first of a series of six, for it clearly points the way to what 16mm. producers can do these days that their erstwhile market for sales films has dwindled.

This particular picture is an outstanding example of what can be done with Kodachrome movies to teach difficult subjects. Through the cleverly blended use of normally photographed action, close-ups of cut-away sections, and excellent animations, the film tells the story of electric arc welding even better than an actual demonstration could. The close-up shots of the welding arc are sensational.

## HELPING BUILD ARKANSAS

Institutional film, 800 ft. Kodachrome, sound.

Presented by Arkansas Power & Light Company.

Produced by The Calvin Company.

While far from being a poor representative of its type, this picture impressed us as being decidedly below par for its producers. The photography of the exteriors is excellent, but on the interiors, the cinematographer decidedly missed fire. The film traces the growth of electric power in rural Arkansas from 1914 to the present, and employs several interior sequences to show the "before and after" of the spread of rural electrification. It is in the "before" scenes that we felt the camerawork was badly at fault. In scenes like this, purporting to show the unfavorable lighting conditions of the days of coal-oil lamps, definite effect-lightings are called for. But in this picture, they aren't delivered: as far as lighting goes, there's very little to differentiate the kerosene lamp period from today's electric-lighted period—a distinction the sponsor was most anxious to make.

Direction and story-presentation also lack something in imagination. After getting off to a decidedly good beginning, showing things as they were before the spread of electrical power, the film bogs down badly, and expends a good deal more footage than is necessary showing the sponsor-firm's dams, transformers and power-lines.

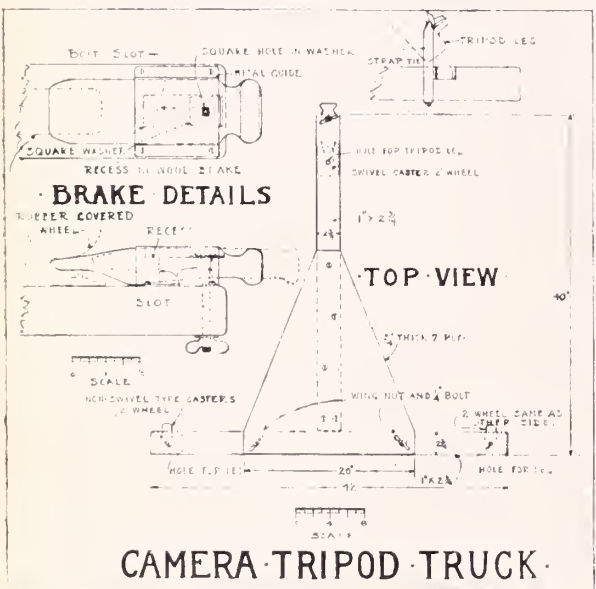
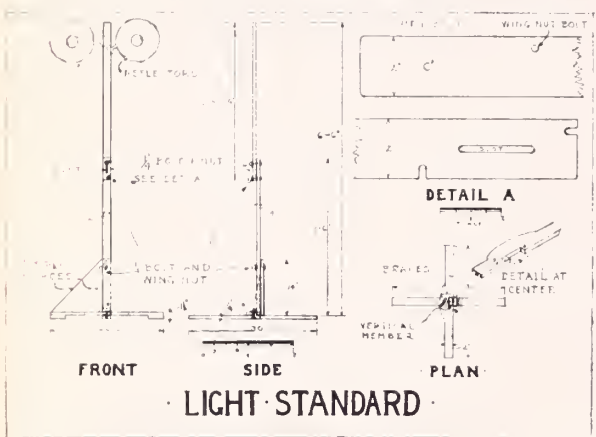
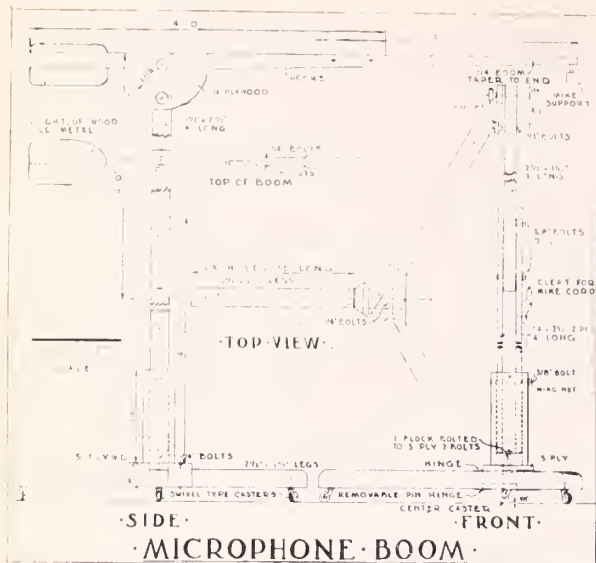
Clever use is made of animated miniatures to convey the increasing centralization of the state's power facilities. It is to be regretted that the same technique is not employed to show how power-lines can be switched to keep power flowing in emergencies. The color print and recording are well up to the usual Calvin standards.



# Building A Microphone-Boom For 16mm. Sound Home Movies

By CLARENCE N. ALDRICH

Past President, Long Beach Cinema Club



CAMERA-TRIPOD-TRUCK

ONE of the first things you learn when you begin to shoot your home movies in 16mm. sound is that microphone-placement is every bit as important to your scene as is camera-placement. The mike has to be close enough to the actors to give your recording good quality and volume, yet of course it can't be visible in the scene itself. And if your actors are going to move around much, your recording will

be a lot better if the mike can follow them around; otherwise, both the quality and the volume of their voices will change as they approach or recede from the mike that picks up the sound.

The professionals, who have been making sound-films for nearly fifteen years now, found out long ago that the ideal sound pick-up is by suspending the mike on a boom which will hold it above and a bit in front of the actors—just out of the camera's field—and which permits moving the mike so it can follow the players around the set. But before that, they tried out plenty of other ideas which, while they worked, didn't work well enough.

Since I bought my RCA 16mm. sound-camera some time ago, my experience in making home-movie sound films has paralleled that of the professionals. First I tried setting the mike up on a stand or tripod just outside the scene; but except in close shots, that usually failed to get it in close enough to give me good sound quality, and of course it couldn't "follow" the actors at all. Sometimes, when the scene permitted, I tried hiding the microphone right in the scene, behind a pile of books or a vase of flowers. That gave me better sound, but if my people walked, or even turned away, I still couldn't follow them.

Getting more respect for the professional sound-men every minute, I next tried suspending my mike above the actors on a cord stretched overhead across my set. This gave me the sound quality I wanted, but again it didn't permit the mike to follow the players if they moved. Then I tried tying the mike onto the end of a fairly long bamboo pole, and having some more or less willing helper hold the pole overhead, so that the mike was placed in the ideal position above the actors. That was a good deal better; it put the mike where it was most useful, and enabled it to follow the people around. But a microphone—even a lightweight one—at the end of a six- or eight-foot pole doesn't take long to grow surprisingly heavy. After a few takes in which my helper's arms grew tired and let the mike drop down into the scene, I agreed with the professionals that an untiring steel microphone-boom is the best way to handle the mike.

So I decided to buy myself a good, commercially-manufactured microphone-boom made of metal, with pretty chromium-plated trimmings for appearance's sake, and rubber-tired wheels so it could be easily moved about the set.

But when I tried to buy one of these booms, the dealer told me, "We can't sell

you one without a priority number!" And to get a high enough priority rating to permit me to buy that boom before the war was over is impossible for an ordinary, garden variety of cinemateur like me. It was a case of make one yourself—or go without . . . and while you're at it, don't forget that metal tubing is on a priority basis, too.

I finally decided that the only way I could get my mike boom was to construct it of wood. I made a few sketches from pictures of professional ones I'd seen in *THE AMERICAN CINEMATOGRAPHER*, but I was still a bit in the dark as to the proper dimensions. But when, a few weeks ago, some of us from the Long Beach Cinema Club joined Bill Stull in making some tests of the new Auricon 16mm. sound-camera, I saw just the type of mike-boom I wanted. I whipped out my pocket ruler (you'll seldom see an architect without one!) and finally secured the dimensions for the mike-boom I'd been planning.

Using these dimensions, I've made up a really satisfactory microphone-boom which can be constructed of wood, using only a few nails, bolts and hinges. It stands seven feet high and its eight-foot arm is pivoted so it can be raised a good bit higher than this; yet the entire outfit can be dismantled very quickly and folded up into a small space for storage or transportation. None of the folded members are over four feet long.

The base has three legs, with four casters, one at the tip of each leg, and the fourth in the center of the base, to provide an extra support at this point. To make the outfit portable, the base legs are hinged to the center support so that they can be folded. To make this joint rigid, without having to complicate the design with diagonal cross-braces, you will notice I employed *two* hinges at each joint—one above the joint, and one below. The one at the top of the joint is an ordinary hinge, and is put there to permit folding the legs. The lower one has a removable pin, so that when you want to fold the device, this hinge comes apart, but when the two parts of the hinge are together and the pin in place, the leg is virtually as rigid as a solid member.

The upright is made in two sections, held together with a pair of 3/8" bolts, centered 7 inches apart, and fitted with wing-nuts. The boom-arm is also made in two 4-foot sections, tapered, and fastened in the same way with a couple of 1/4" bolts and wing-nuts.

The boom is pivoted, 18" from its large end, to the upright, and a wooden





counterweight (metal, if you can get it!) is attached to this short overhang to balance the weight of the long arm and the microphone. Naturally, the precise size and weight of this counterbalance will depend on the type of mike you use, and the type of wood you use for your boom-arm.

To permit adjusting the angle of the boom, a slotted quadrant of plywood is fitted to the under-side at the point where the boom-arm is pivoted to the upright, with a bolt and locking knob passing through both the upright and the curved slot of the quadrant. With this, the boom can be raised or lowered freely, or locked rigidly in place. The two adjusting knobs at the junction of the boom and the vertical support were made from the wheels of a toy wagon. You'll notice, too, that four small hooks were provided on the under-side of the boom, to support the microphone cable, and keep it from dropping down into the picture, and a cleat was placed on the upright on which the mike-cable could be wound.

You can finish the woodwork of your boom any way you've a mind to, painting it, varnishing it or staining it, as may suit your particular fancy. To get that chromium-finish touch we've been trained to like in our photographic equipment, I used a little aluminum paint here and there on mine—on the counterweight, the adjusting quadrant, parts of the base, and so on. This isn't necessary, but it makes the home-made gadget look dressier!

The next thing I needed was a good, collapsible tripod-truck—one that could be taken down quickly for transporting from place to place, and one which would be steady and strong, with casters to permit wheeling my camera quickly into position, and a brake that would keep it from moving, once my shot was lined up.

Again I beat priorities by building the device almost completely of wood. I arranged two wooden members, each of 1x2 3/4" stock, in the form of a T, reinforced with a triangular piece of 3/4" plywood (7-ply) 20" wide by 24" long. You can, if you want, hinge these legs to fold; but I found it simpler to make the rear leg (which forms the top of the T) in one piece, and fasten it to the rest of the assembly with a pair of 1/4" bolts and wing-nuts. At the ends of these two

Above, left and center: The mike-boom in use; right: detail of adjusting quadrant. Below, from top to bottom: mike-boom folded; camera-truck, and lamp-standard.

legs, I mounted two 2" non-swivelling wheels, and at the tip of the third leg, I placed a 2", swivelling wheel.

A wedge-type brake constructed of hardwood clamps down on this third wheel and keeps it from either swivelling or revolving when you're shooting. The wedge is held in place by guides, and moves straight in and out. When in the "out" position, it's clear of the wheel; when it's in the "in" position, it bears tightly against the wheel and acts as a brake. A bolt, fitted with a wing-nut and washer, passes through a slot in the wedge and attaches it to the leg of the tripod-carriage. To tighten the brake, you shove the wedge forward and turn the wing-nut.

The tripod-legs of the camera fit into holes at the ends of the three legs of the truck. I use straps which pass around the wooden member of the truck and up and around the tripod-leg to hold the tripod firmly in place, but you can also use heavy rubber bands or coil springs such as you use on a screen-door. In the latter case, it would probably be a good idea to make little notches in the ends of your tripod-legs, into which the springs can fit.

The triangular piece of plywood on this truck serves not only to reinforce the device, but also to provide a handy place to put such accessories as your camera-case or (in my instance) the amplifier of a single-system sound-camera.

Another useful gadget I've made in which wood gets around priorities is a collapsible lamp-stand. In general, this pretty well follows a basic design which has been described a number of times in this and other photographic magazines, but the ones I've built are designed so they can be folded compactly for storage or transportation.

The lamp-stand consists of a cross-shaped wooden base, from the center of which extends a wooden upright onto which you can attach any number of "clamp-on" Photoflood reflectors. If you're not much concerned about the problem of moving your equipment from

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## This Year — Make A GASLESS VACATION MOVIE!

By WILLIAM STULL, A.S.C.

**W**ARTIME rationing of gasoline, tires, and even rail transportation as well, will probably restrict your travel opportunities this summer—but that doesn't mean they'll necessarily put a crimp in your vacation movie-making!

To most of us, the word vacation has come to be synonymous with the idea of going somewhere, and a vacation movie, in consequence, indicates a cinematic record of that trip. And it's all too easy to reason that if you can't obtain gasolines, tires, or even transportation by train, plane or bus wherewith to "go somewhere," you can't very easily make a moving picture record of the vacation trip you don't take.

That's excellent reasoning—beautifully logical and all that—except that it leaves out of consideration one simple little fact: that the total effect of a movie on the screen is the illusion produced by a properly chosen succession of scenes. And it's not at all necessary that successive scenes be taken at either the same time or the same place in order to produce the illusion that they were. In other words, there are quite a few ways you can make an excellent movie during your vacation—one that shows you and your family amid almost any vacation surroundings you desire—and do it without leaving your home town!

It's a matter of combining what the professionals call "stock-shots" and

"added scenes." The stock-shots, most of us have in all too great profusion. If we're among the rare few who can be hard-boiled when editing our own films, there will probably be plenty of stock-shot footage of almost every place we've vacationed since the camera bug caught us, buried among the left-over scenes from past vacation epics. If we're among the more average filers, those stock-shots are still available, but they're buried right in our vacation pictures, in the form of excellent (but repetitious) scenic shots we just hadn't the heart to eliminate.

A picture I saw at a recent cine-club meeting is a perfect example of this. Way back in 1941, when tires were plentiful and gas unrationed, this chap had gotten into the family car and covered practically all of the Western National Parks. He had looked in at the Grand Canyon, then headed up through Zion and Bryce Canyon National Parks. After that, he had spent several days in Yellowstone, and driven over to Glacier Park, where of course he took the boat trip to Canada's Waterton Lakes Park, as well. From that, he'd rolled along through Jasper National Park, Banff, Lake Louise, Vancouver, and Victoria, and come home to Hollywood, paying due attention en route to Mt. Rainier National Park, Crater Lake, and of course Yosemite. All told, his car must have covered fifteen or twenty thousand

miles, and his camera (judged by what he put on the screen) nearly as much, for he showed a very generous 1600 feet of 16mm. Kodachrome which looked as though most of the editing had consisted of snipping off the leaders and putting in commercially-made titles identifying the footage shot in each park.

As a matter of fact, he had ample footage to make at least four complete pictures—more likely half-a-dozen. And he had practically no scenes that tied himself or his family in with the many interesting places he had visited. A perfect invitation, in other words, to spend this summer's holiday making a gasless vacation movie—1942 style!

There are quite a number of different ways you can do this, but here's one way I'd tackle it if that film were mine. First, I'd break it up into about five separate, one-reel pictures—one to each Park or group of Parks visited. The National Parks of the Southwest—Grand Canyon, Bryce and Zion—would logically group together to make one. Yellowstone and the Grand Tetons logically make another. Glacier and Canada's Waterton Lakes constitute a third. The rest of the Canadian visit—Jasper, Banff, Lake Louise, Vancouver and Victoria—could be grouped together with some such title as "Canada's Western Wonderlands." The footage secured on the run down the Pacific Coast could be made into one, or maybe even two or three complete one-reelers, depending, of course, on how much footage was gotten at each point. In addition, he had interspersed a lot of odd shots of flowers at each of his stops, which could, if you wished, very well be made into a complete picture dealing entirely with "Wildflowers of the West."

This initial trimming would give you five (or maybe six) pictures averaging somewhere between 250 and 300 feet in length—a bit short, you'll say, for one-reelers. Correct! But don't forget you'll need titles to tell the story completely: they'll probably add 50 to 100 feet per reel, for you'll want to cut in a title at every point where in a private showing you feel called on to speak a word or so of explanation, to make what is seen on the screen more clear.

In addition, as I think I pointed out earlier, this chap's excellent footage had very few, if any, scenes that tied him and his family into the trip. So the next step (which can really be done best even before the titling) is to make a good number of "added scenes" to remedy this lack. Pick backgrounds which are either noncommittal, or more or less similar to what *might* be expected in the neighborhood of the scenic shots you've already got. Against these backgrounds, make shots of yourself and your family, apparently looking at—or even photographing—the scenery. Cut these in with the scenic shots, and if you do the job properly, on the screen there'll be the illusion that the two were made together. In other words, you'll have put yourself into the picture.



If in any of your scenic long-shots, you show members of the family, be sure when you make these tie-in "added scenes" to have them wearing the same costumes. If you haven't long-shots which actually show yourself or your family on the real location, you'll have more freedom in costuming: just put them in the sort of clothes they *might* have worn when they were on that location.

The problem of suitable backgrounds isn't half so hard as it might seem. The secret lies in *suggesting* the background in the personal shots, rather than showing it literally. The sky, for instance, is pretty much the same whether you photograph it in Canada or in Kankakee. A tree-branch is pretty much the same—provided you select the same type of tree—no matter where you film it. In one of the illustrations, for example, the long-shot was made in Yosemite, while the close-up, which when intercut would give a very satisfactory suggestion of being shot in the same place, was actually made in New York. The scene of the river-boat was made on the Ohio river, near Marietta, while the accompanying two-shot—which gives a very convincing suggestion that the girl shown was filming the boat—was made near Rochester.

Camera- and lens-angles are very important in putting over this kind of trickery. The camera-angle used in making the closer shots of your people should be such as would be believable in a reverse-angle shot made on the real location, showing your family looking at the scene, or you filming it. In the Yosemite picture, for example, you'll notice that the long-shot suggests that it was (or might have been) made from a little rise in the ground above the river-bank, and the close shot of the people was made from a slight upward angle, too. Also, the center of interest in the long-shot is the waterfall—and in the close-shot, the girl's camera is pointed a bit upward, just as though she were pointing it up toward the fall.

In the same way, the scene of the river boat is from a level viewpoint and angle, and the intercut close-shot of the people apparently filming it preserves this level-angle viewpoint. Also, in both instances, the girl with the camera is looking in the direction on the screen which suggests that she is looking (and shooting) right into the accompanying scenic long-shot.

If you have a telephoto or long-focus lens, it is a very good idea to use it when you make these intercut "added scenes." Using a 2-inch or 3-inch lens in place of the usual 1-inch (25mm.) on a 16mm. camera for close angles like medium-shots or close-ups, the lessened depth of field of the longer-focus objective will tend to diffuse your background, and make it less positively identifiable. For the same reason, if you have a neutral-density filter, use it on these "added scenes," so that you can shoot with your lens wider open, again



Viewed in succession on the screen, these shots suggest that the girl in the left-hand picture was snapped as she photographed the right-hand landscape—but actually each of the two shots were taken hundreds of miles and several months apart!

cutting down on depth.

Merely cutting in "added scenes" like this will help make your gasless vacation pictures: but if you want to carry the idea to its fullest and most enjoyable development, plan your "added scenes" so that you build up a little story around your scenic shots. This "story" doesn't have to be a complicated affair; all you need is a simple thread of story upon which to string your scenery. Any number of story ideas will probably suggest themselves to you—not only ideas based on things that actually *did* happen, but on things that *could* happen, as well.

For example, one of the best story-scenics I've seen was "A Midsummer Night's Dream" made several years ago by John E. Walter, now the President of the Los Angeles 8mm. Club. His story premise began with some shots of himself and his wife discussing where they would go for their vacation. All through dinner and the wifely dishwashing that follows, they are shown poring over circulars dealing with various vacation spots; afterward, they seat themselves in the living-room—not to read the evening papers or their favorite magazines, but to keep on studying vacation travel-folders. As each new folder is picked up, it serves as a natural introduction to scenic shots of that particular locality, generally, since Walter is a thoughtful cinemaker, including shots of the pair walking along trails, or enjoying the scenic views. Finally comes bedtime, with Walter still sleepily studying a travel-folder—this time of the Grand Canyon. We see the scenes he shot there, ending up with a very skillfully-handled climax in which, trying to get precisely the camera-angle he wants, Johnny takes an extra step backwards—and apparently tumbles over the rim of the Canyon! A quick dissolve ends the picture more reassuringly: the luckless vacation-planner has merely capped a nightmare by tumbling out of bed!

In another of his films, this same filmer has used an idea which could very well be adapted with only minor changes

to many a 1942 vacation film. At the start, we are introduced to Attorney Walter preparing for a big case, snowed under with law-books in his office. Telephoning his wife, who is seen packing the start an expected vacation, he informs her that the trip is off, at least until his case is won. A montage follows, in which "flash" shots of Walter hard at work, both in court and at his office, poring over his law-books and briefs, with pages flipping from the calendar, denote a considerable lapse of time. Finally we see him, still at work, in his office one evening, when his better half appears and forcibly drags him away to a movie. As they seat themselves in the theatre, the title of a "Pitzpatrick Travelogue" flashes on—and, of course, proves the entering wedge for a succession of Walter's best Kodachromed vacation scenic shots, deftly intercut with shots of Walter and his wife in their seats in the theatre, registering their reaction to the scenes. Eventually the end-title of the travelogue is seen, and the pair leave the theatre, with the comment that "Well, I guess that's all the vacation we'll get this year!"

The same general idea can easily be brought up to date in some fashion like this. Fade in on the husband sadly regarding the thin, worn tires on the family car. (A flat tire, or a badly shredded blow-out would be even better—but don't, by all means, get one just for Art's sake!) Shaking his head, he walks sorrowfully into the house, and remarks to Wife, "Well, I guess there's no vacation-trip for us this year!" To this she replies, via close-ups and title "Remember the movies you took when we went to so-and-so?" He nods, and, taking the hint, threads up the projector. As he starts it, cut to a title—filmed with a wide black border and rounded corners to suggest a picture on the screen—simulating the main title of a picture made on that trip. This, of course, actually introduces the shots you made of that place.

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Left: How professionals diffuse sunlight with overhead scrims; center and right: note how in these enlargements from Kodachrome, the shot made in direct sunlight accentuates wrinkles, while shot of same girl in diffused light subdues them.

## Try Diffused Lighting For Kodachrome Close-Ups

By RAY RENNAHAN, A.S.C.

A CONSTANT source of amazement to professional cinematographers—especially those of us who have made pictures in Technicolor—is the way so many amateurs overlook the advantage of using diffused lighting when photographing people outdoors in Kodachrome. Color—whether it's Technicolor or Kodachrome—is inherently flattering to most players; but a big part of the secret of it is the trick of combining diffused lighting with the naturally flattering fact of color.

Study any Technicolor picture (except, perhaps, a travelogue where things had to be shot as they were or not at all); in the exterior sequences, you'll almost never see close shots of the players made in direct sunlight. The effect may look like direct sunlight—but if you study it closely, you'll see that the sunlight was diffused—softened down—in some way, and probably relieved where necessary by reflectors or color-corrected "booster" lights, in order to get the most flattering result.

The reason for this is simple enough. Direct natural sunlight is not only an intensely strong source of light: it is also intensely concentrated. It comes very close to being what the illuminating engineers like to term a "point source of light." Though the actual source of light—the sun—is immeasurably huge, its rays travel so many million miles that those which illuminate any given point on this earth reach there travelling almost perfectly par-

allel. That is why sunlight throws such a strongly-marked shadow, rather than the vaguer one you get from diffused light-source like a Mazda lamp.

That strongly directional lighting throws every little blemish and wrinkle in a person's face into strong relief. On the screen, even in close-ups of a young and pretty girl, you'll see lines and wrinkles you don't actually perceive when you're looking at her in real life from close-up distance.

On the other hand, a diffused lighting—either indoors or out—is a softer lighting. The light-rays aren't travelling absolutely parallel, like a bundle of arrows. They're scattered. They strike your subject's face from more than one angle. So if some of the light-rays tend to accentuate those little lines and wrinkles, there will be others, which strike the same area from slightly different angles, which tend to light up the little shadows which make the strong photographic image of the wrinkles, and effectively "wash out" the blemishes.

All of which is very nice in theory. But I can see many a practiced amateur filmer starting to turn the page with a sniff, and mentally asking how a chap with only a 16mm. or 8mm. camera, and without the elaborate light-controlling facilities of a studio cinematographer, can control sunlight so as to get this diffused daylighting in his exteriors.

Luckily there are several simple and altogether practical ways this can be done. Where you can exercise any con-

trol over the placing of your action, the easiest way is to simply move your subject out of the direct sun, and shoot your scene in a spot that's shaded.

Now, don't make any mistake in this: choose a spot that's comparatively lightly shaded, in preference to an area of really heavy shadow, which would of course simply complicate your exposure problems. Pick what the exposure-guides call an "open" shadow—an area which, while it's shaded, still gets plenty of soft reflected light from adjacent, sunlit areas. For example, a big, shady porch on the sunny side of the house—or in the shade of a tree surrounded by a good-sized open expanse of sunlit lawn—or on the shady side of a building with a sunlit lawn, street, or another building to act as a natural reflector to throw in a diffused light to "open up" the shadow.

Incidentally, if for any reason you should have to shoot Kodachrome around the middle of the day, when if your subjects are in direct sunlight, the high-angled light will do the very worst with shadows in their eyes, under noses, chins, and so on, you can get surprisingly pleasing results by the simple trick of turning your people around so you have their faces in the shadow, relieved with a nice, outlining back-light. Of course in this case, you'll be smart enough to take your meter reading for the faces, carefully shielding the meter's eye from the direct sun of the rim-lighting.

Another way to get this diffused lighting is to shoot your scenes on a slightly overcast day. Notice that I say *slightly* overcast! On a heavily overcast day, the heavy clouds will not only give you a problem in exposure, but they'll alter the color-balance of your lighting. The clouds will stop most of the blue component of sunlight, leaving an excess of red and infra-red (you know how easily

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# A Scenario For The Golfer's Wife

By NORMAN STUART REID

GOLF and movie-making are two grand sports, and two that can be combined in an amazing variety of combinations. But when you combine 'em, there's no reason for being deadly serious about it every time! Home-movie audiences aren't very likely to be absorbingly interested in slow-motion analyses of your own golfing form, and as for the form of champions, or the details of local tournaments—well, they can see them better in the theatres, in professional sports-shorts and newsreels.

But a golfing comedy—! That's another thing! Here's one that ought to keep any home or club audience amused to the last frame.

Main Title:

## THE GOLFER'S WIFE

Scene 1: FADE IN. Close-up of alarm-clock. The hands point to 5:00, and the alarm is set for the same hour. The clock is jiggling, as though the alarm were ringing stridently. A male hand quickly reaches into the frame and shuts off the alarm.

Scene 2: Close-up of a pair of slippers by bedside. A man's feet come down and slip into them, then walk off. (Pan after them, if possible.)

Scene 3: Close-up of shower-handle. A man's hand reaches in and turns on the water.

Scene 4: Close-up of shower-nozzle as water starts to flow.

Scene 5: Close-up, corner of bathroom floor. First the coat, then the pants of a pair of masculine pajamas are flung carelessly down.

Scene 6: Shoulder-length close-up of a man (rear view) enjoying his shower.

Scene 7: Close-up of wife, in bed. She's obviously been wakened, and is trying hard to get back to sleep again.

Scene 8: Same as Scene 6.

Scene 9: Same as Scene 3. The man's hand (wet, this time) turns off the water.

Scene 10: Same as Scene 5. A large, damp bath-towel lands limply on the floor.

Scene 11: Low-level close-up outside bathroom door; slippers feet come out and walk to side of frame.

Scene 12: Close-up of dresser-drawers. A drawer is jerked open, and man's hand removes underwear. That drawer is slammed, another opened, and a sport-shirt is removed.

Scene 13: Close-up, in closet. Man's hands reach in and bring out a pair of slacks with suspenders attached.

Scene 14: Close-up in mirror. A man's



face comes hurriedly into the glass. He takes a quick look at himself—brushes his hair down with one hand, and exits.

Scene 15: Close-up of bedroom door. The door is slammed violently.

Scene 16: Close shot of closet door. It is opened; hands reach in and come out with golf-bag, and door slams.

Scene 17: Close shot of front door (closed). Joe Duffer, golf-bag over his shoulder, hurries down the hall, and through the door slamming it behind him.

Scene 18: Close-up of rear end of car. It starts with a puff of smoke from the exhaust and backs quickly out of garage.

Scene 19: (Shoot at 8-frame speed.) Long-shot across drive-way to street. Car backs speedily out of drive, reverses and rushes away down street.

Scene 20: Full shot of Marge Duffer, the golfer's wife, in bed. She pitches and tosses, clearly having a hard time getting back to sleep.

Scene 21: Close-up of alarm-clock, same as Scene 1, but hands point to 5:15. LAP-DISSOLVE or Fade out and in to same, but showing 8:30.

Scene 22: Same as Scene 20. Bed is more rumpled, and Marge is still pitching and turning. Finally she looks at the clock, and decides to get up. FADE OUT.

Scene 23: FADE IN. Long-shot, *ad lib.* of Joe Duffer, enjoying himself on the golf course. FADE OUT.

Scene 24: Medium long-shot, in kitchen or breakfast-room. Marge—up and dressed but looking rather bedraggled—is sitting forlornly eating her breakfast.

Scene 25: Close-up of Marge. She seems to be reading the Sunday paper—but the paper is upside-down! FADE OUT.

Scene 26: FADE IN. More long-shots of Joe, still golfing. FADE OUT.

Scene 27: FADE IN. Long-shot of Marge, as she wanders around bedroom and bathroom, picking up after her spouse. (Follow-shot if practical.) Intercut close-ups *ad lib.* to get over idea she doesn't enjoy being left alone this way.



Photographed on Agfa Film.

Scene 28: Long-shot, in living-room. Marge comes in and sits in chair, starting to read newspaper.

Scene 29: Close-up of Marge, reading. She reads listlessly, then starts as she sees something that gives her an idea.

Scene 30: Close-up of newspaper headline: part of it extends out of frame,

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Right: Sergeant Sheldon takes a meter-reading while Officer Phillips prepares to shoot Kay Kyser—with a 16mm. camera. Below: top, filming a near-accident; second, Sally Wadsworth, in close-up, gets a ticket for jaywalking; beneath, editing the police-made film; bottom, rehearsing narration: left to right, Officer Glavas, Sgt. Sheldon, Officer Phillips and Capt. Parker. Photos courtesy Street & Smith and "Pic" magazine.



## POLICE MAKE FILMS TO TEACH TRAFFIC SAFETY

By WILLIAM STULL, A.S.C.

**W**HAT would you say if, as you drove to work tomorrow morning, you saw a blue-uniformed sergeant of police standing in the street, carefully instructing a pretty girl how to jaywalk, while another uniformed officer photographed her with a 16mm. Filmo? Or if, on your way home, you encountered them filming bespectacled Kay Kyser trying to force his way across the city's busiest boulevard against the stream of rush-hour traffic?

If you happened to be in Los Angeles, you would recognize these movie-making coppers as members of the Police Department's Traffic Education Unit, doing their job to make the streets safer for pedestrian and motorist alike. For Los Angeles, the home of the professional movie industry, has found that police-produced 16mm. sound-films which can be shown scores of times each week to clubs, civic groups and schools are a very potent help in their department's task of making one accident occur today where three took place yesterday.

These pictures—there have been three of them released so far—are really "police productions" in every way. With the exception of the sound-recording, every detail of production—scenario-writing, photography, editing, title-making, and writing and speaking of narra-

tion—is handled by police officers. And they're so good that we understand Bell & Howell is going to distribute them nationally through the Filmosound Library.

Three men form the backbone of this unusual movie-making unit. Sergeant Stanley Sheldon, who is one of the heads of the Traffic Education Unit, might be termed the producer. Officer Dan Phillips is the very capable director-cinematographer-editor, while Officer Jim Glavas not only writes scripts and narration, but on at least one occasion has done a very professional job of speaking the narrative.

The story really begins some time ago, when Sergeant Sheldon came home from a club-meeting at which an educationally-slanted 16mm. business movie was shown, and found himself lying awake visualizing what a powerful aid movies would be to his job of preaching traffic safety. The next morning, he took his plan to his immediate superior, Captain William H. Parker, who heads the Accident Investigation Bureau. Parker immediately grasped the value of the idea, and together the two placed it before Deputy Chief Bernard Caldwell who, as Director of Traffic, heads the city's drive for safer driving and fewer acci-

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## Making A 16mm. Documentary Among Oregon's Indians

By PHIL M. RICHARDSON

**T**HE Indian Service said they had no objections to movies being taken of the Indians fishing at Celilo but first of all it would be necessary to get permission from these native fishermen. I was told to get in touch with the agent at The Dalles, Ore., Mr. C. G. Davis.

I had just returned from a trip along the Columbia River. At Celilo there is an Indian fishing village whose founding date goes far back to The Time That Was. These people depend for their limited income almost entirely upon the salmon they dip out of the river. What caught my eye, though, was the line of shacks on each side of the highway. They suggested to me that here was a story of primitive man's struggle with civilization.

Here indeed was material for a true documentary film. With the thought that no people in any part of the world desire poverty and will act to prevent improvement in their conditions, I decided to study the situation thoroughly before going ahead. I believe that failure to understand the reasoning of the less fortunate or peoples of other races has often led to the assumption the law of evolution and progress does not apply to those who do not immediately adopt all of the refinements of this day and age.

Mr. Davis kindly arranged for a meeting with Chief Tommy Thompson. An interpreter presented my idea to the old man. The Chief was in good humor and gave the permission I sought.

Then followed months of preparation. Everyone interviewed was anxious to help in any way. Files of the Oregon Historical Society were searched for light on old treaties. The Attorney General's office furnished copies of findings in cases where these treaties were concerned. Trips were made to Celilo from Portland, one hundred miles one way, to talk with Mr. Davis and the Indians themselves.

George P. La Vatta, Field Agent, Indian Organization Division, and his sec-

retary, Mrs. Marguerite Waggner, in the Portland office of the Indian Service were most kind.

Every copy of THE AMERICAN CINEMATOGRAPHER I could beg, borrow, buy or steal was studied for suggestions. Paul Rotha's book, "The Documentary Film," and Paul Burnford's "Filming for Amateurs" were my text-books.

My equipment consisted of a Bell & Howell 70E with a Spider Turret. I used three lenses, 15mm. Cooke *f*:2.5; 1-inch Cooke *f*:2.7; 2-inch Cooke *f*:3.5. A Bell & Howell all-metal tripod equipped with their Alignment Gauge plus a sunshade and filter attachment of my own design was used wherever possible. Where the tripod could not be used, a camera handle was found useful. Film was Eastman Safety, Super-X, and Super-XX, as varying conditions required.

At first I had planned to use Kodachrome, but later changed my mind feeling color might glamourize the poverty and defeat the purpose of the story I was trying to tell.

After rewriting my story so many times I knew it by heart, I finally felt I was ready to go on location—one hundred miles from home.

Early in September I arrived at Celilo. On a previous trip I had arranged for a guide to be with me in case my right to take pictures was questioned. My man was gone. The Chief was out of town and so was Mr. Davis, the agent. Realizing most Indians have a real dislike for anyone with a camera I hesitated to go ahead alone.

Late in the afternoon I found a man who said he would take me around. But he would be busy for another week. I drove the hundred miles back to Portland somewhat bewildered at my failure to expose a single frame.

At the end of a week I went up again. No guide. He had gone to Portland. He had arranged with another Indian to furnish the needed help. After a two hours' search I found my new assistant,



Frame enlargements from "Celilo." At top, how the Indians fish; beneath, Chief Tommy Thompson; below, Representative of the Umatilla Indians; bottom, a typical Celilo "home" and one of its inhabitants.

only to discover him very reluctant to do the job.

Remembering the verbal permission of the Chief I decided to go it alone. Taking the cable carrier to one of the islands in the river I had shot about

(Continued on Page 324)



# Get Better Movies of Parades!

By JOHN L. HERRMANN, A. S. C., F. R. P. S., F. R. S. A.

**M**OST military subjects are taboo these days as subjects for amateur camerawork. But not Fourth-of-July parades! There, amateurs in almost every corner of the country will have an opportunity to film their fill of America's armed might—marching troops—waving flags—bustling “jeeps” and ponderous command cars—and maybe in some cities, rumbling tanks, “half-track” armored cars and motorized artillery.

If you live near any military post or city where there'll be such an Independence Day parade held, you'll surely want to make a parade sequence the highlight of your holiday movies. So take a few tips from a newsreel veteran of years of parade-shooting, and “cover” your subject in professional style, so you'll have pictures worthy of your subject-matter.

The professional's first thought is to pick a camera position where he'll have the best possible viewpoint. The newspapers will usually give you advance notice of the route of the parade; study it carefully beforehand, and make arrangements in advance to set up your camera at a spot where you'll have as nearly as possible the ideal combination of viewpoint, camera-angle and lighting.

Parades should always be filmed coming toward the camera—never going away from it—and if possible, crossing the frame at a diagonal angle. This not only gives you the most effective viewpoint, but also keeps the marchers on the screen long enough so the audience can see what they are.

Never attempt to shoot a parade directly broadside-on. All you'll get shooting from this angle will be a confused blur which is fearfully hard on the audience's eyes and nerves. Moving broadside-on across the frame, the marchers will be moving too fast to be “stopped” by most cine-camera shutters. Besides, no individual object or rank of marchers will be on the screen long enough to be recognizable. Your audience will be constantly straining itself to see what it's all about—and not succeeding.

If possible, pick a location where you can shoot slightly down on the parade. But when I say this, I don't mean an extremely “arty,” almost vertical angle!

One or two shots like this might make interesting, modernistic compositions, but they wouldn't tell you much about the parade. Pick a spot in a second-story window—or, better yet, on a projecting balcony or marquee where you can get your camera out over the sidewalk and comfortably above the heads of the sidewalk standees, and of course aim your lens so the paraders are coming diagonally toward you.

Never, by the way, attempt extreme low-angle shots, even with a wide-angle lens. One shot like this might be interesting; but if you try to “cover” a whole parade from this angle, you might just as well save the laboratory the trouble of processing your film, for your picture would be just a concentrated headache for its unfortunate audience!

The really ideal angle from which to film a parade is from a slightly elevated position just at a point where the line of march does a turn. This way, you can in a single shot get the marchers approaching your camera on a diagonal, coming closer and closer, and finally turning past as they swing the corner, thereby giving you a variety of angles.

If you have any chance of picking your spot for lighting, choose a set-up that will give you either a front-light on the marching troops (especially if you use Kodachrome) or a three-quarter front cross-light. If your angle includes that desirable diagonal in which you see the marchers approaching the camera from quite a way down the street, you'll get a very effectively accentuated impression of movement if you have a cross-light, with open, sunlit areas in front of low buildings alternating with shaded areas where taller buildings throw their shadows well into or across the street. As the moving men and machines come toward you, passing from sunlight to shade and back into the sun again, your audience will get a greatly enhanced feeling the marchers are really going somewhere.

If you have a camera capable of more than one speed, shoot parades with the cinebox operating at about 50% faster than normal speed—24-frame speed if you're shooting silent, and 32 frames per second if your film is going to be projected at sound speed. If you can afford the extra film, it wouldn't hurt to have the camera going even faster—

say 32-frame for silent projection, and 48 for sound. This slows down the action and not only keeps any given object on the screen longer, so it's better recognized, but also tends to smooth out the action.

Nine times out of ten, your parade shots will be better if you make them all, or nearly all, with your normal lens. Wide-angle shots usually give too small an image, and telephoto-shots, except of uncommonly unusual subjects, don't give enough of the “parade” atmosphere. Besides, with tele-lenses, you inevitably cut down the time any object is on the screen unless you pan and “follow” it—which isn't easy unless you're almost professionally expert. If you do make telephoto shots, be sure and overspeed your camera to stretch out the screen-time and smooth the action.

If you can, try to plan your parade sequence so it tells the whole story. Begin with the crowd assembling, long before the parade appears. Cut in some telephoto shots or “staged” close-ups of people (especially youngsters) craning their necks, watching for the parade to put in its appearance. Then show the head of the parade coming down the street. (Here's one spot a wide-angle shot might be useful.) Then follow through with the highlights of the parade itself, with occasional cuts of the crowd, if you can get them. Finally, show the crowd breaking up as the tail end of the parade passes by, and you'll have the whole story.

Sometimes you can manage things so you get two shots of the most interesting parts of the parade, rather than one. Often you'll find that a parade will double back on itself, marching, let's say, north on one main street, and returning on another artery a few blocks to one side or the other. If you make arrangements beforehand, you can often get your long-shots of the parade from a pre-selected spot on the first street, and then hurry over to the return route and bag close-ups from a second prearranged location to intercut. In that event, though, try if possible to plan things so that in both locations your shot will show the marchers travelling in the same direction across the screen.

Two or more filmers can often arrange to “cover” a parade cooperatively the way we newsreel men do, with several cameras at work, each at a different spot, one getting long-shots, another closer angles, a third “cut-in” shots of the crowd, and if possible, a fourth getting shots of the big-wigs on the reviewing stand. Pooling your shots that way, you'll get the most picture for the least expenditure for film—and then, if each of you provides himself with a dupe of the cooperatively-made picture, you'll each have one really complete “story,” rather than several incomplete ones!

END.



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NEGATIVE**

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# A Record Library For Scoring Your Movies

By **CLAUDE W. A. CADARETTE**

Founder, Los Angeles 8mm. Club

Type of scene and mood	Composition and composer	Record number	Size
Small town, picturesque, languorous	1. Intermezzo, "Cavalleria Rusticana", Mascagni	4303	10"
	2. "Andante Contabile", Tschaikowsky	1709	10"
	3. "Veils", Debussy	1920	10"
Garden scenes quiet, peaceful	1. "In a Summer Garden"	9731	12"
	2. "Rosamunde Ballet", Schubert	1312	10"
Excitement, tumult riot, disaster	1. "Night on Bare Mountain", Moussorgsky	11448	12"
	2. "Ride of the Valkyries", Wagner	9163	12"
	3. "William Tell Overture", Rossini	20319-20	10"
	4. "Faust—Ballet Music", Gounod	13830	12"
	5. "Marche Slav", Tschaikowsky	12006	12"
	6. "Magic Fire Music", Wagner	15800	12"
Mystery—Ghostly or murder	1. "Ritual Dance of Fire", De Falla	12160	12"
	2. "Dance Macabre", Saint-Saens	14162	12"
	3. "Sorcerer's Apprentice", Dukas	7021	12"
Fast, busy, excitement, speed	1. "Flight of the Bumble-Bee", Rimsky-Korsakow	6579	12"
	2. "Orpheus in Hades", Offenbach	12604	12"
	3. "Zampa Overture", Herold	13647	12"
	4. "Perpetuum Mobile", Strauss	4127	10"
Lakes, waterfalls, rivers	1. "Faust-Trojan Maidens", Gounod	9647	12"
	2. "Swan of Tuonela", Sibelius	7380	12"
	3. "Thais-Meditation", Massenet	35858	12"
	4. "Dance of the Hours", Ponchielli	11833	12"
	5. "Rustle of Spring", Sinding	20121	10"
	6. "Midsummer Night's Dream—Scherzo", Mendelssohn	7080	12"
Rain, tumbling water, rolling waters	1. "Barber of Seville", Rossini	7255	12"
	2. "Sea & Vessel of Sinbad", Rimsky-Korsakow	8698	12"
	3. "Queen of Sheba Ballet", Goldmark	7474	12"
	4. "Pizzicato Polka", Strauss	1757	10"
	5. "Bachanale, Samson & Delilah", Saint-Saens	6823	12"
	6. "Coriolan Overture", Beethoven	11909	12"
Processions, parades, grandeur	1. "Aida March", Verdi	11885	12"
	2. "Pomp & Circumstance", Elgar	6648	12"
	3. "Procession to the Cathedral", Wagner	9017	12"
Busy street scenes, traffic, agitation	1. "Soviet Iron Foundry", Mossolow	4378	10"
	2. "Forging of Siegfried's Sword", Wagner	14845	12"
Desert, prairies, loneliness	1. "In the Steppes of Asia", Borodin	11169	12"
	2. "In the Village", Ippolitow-Ivanow	11883	12"
	3. "In a Persian Market", Ketelbey	4338	10"
Oriental, Moonlight, Exotic Nights	1. "Festival of Bagdad", Rimsky-Korsakow	8703	12"
	2. Moorish Ballet from "Aida", Verdi	35780	12"
	3. "In a Chinese Temple Garden", Ketelbey	35777	12"
Spanish, Mexican	1. "Espana Rapsodie", Chabrier	4375	10"
	2. Habanera from "Carmen", Bizet	14419	12"
	3. "Spanish Dances", Granados	35977	12"
Religious, Easter services, solemn	1. "Ave Maria", Schubert	7103	12"
	2. "Adoramus", Handel	15214	12"
	3. "Liebestraum", Liszt	6582	12"
Mountains, Majestic Scenery	1. Pilgrims Chorus from "Tannhauser", Wagner	9161	12"
	2. "Siegfried Idyll", Wagner	7381	12"

A GREAT percentage of amateur movie-makers endeavor to add to the enjoyment of their audience by projecting their films with musical accompaniment and, in many cases, with sound-effects, secured from phonograph records.

There is no doubt that a background of

appropriate music is essential to help create the moods which you desire in an audience, and coupled with suitable sound-effects, your picture has more meaning and life.

Those amateurs who possess dual-turntable assemblies can readily have the

music playing on one table, while the sound-effects can be injected by the second turntable as needed. A triple turntable—two for music and the third for sound-effects, professional style—is even handier.

But the owner of a single turntable need not despair, because you can cut your own record for your picture on acetates combining and creating your own music and effects. Most of us know someone who owns a record-cutting machine and these friends are usually looking for an evening's enjoyment of record cutting, especially where a certain plan and program must be carried out.

Working out a musical score from records is not particularly difficult. Scenario films are probably the most complicated, but even they usually require only two or three types of music.

Most sequences are best accompanied by rather quiet, peaceful music. Sequences which contain faster action and dramatic climaxes call for faster—even tumultuous—music. And if you should have any sombrely dramatic scenes, they should be accompanied by rather sombre music.

Simple "home movies"—especially films of family and children—should be accompanied by gay, sprightly music that moves along lightly and cheerfully.

Travelogues should have music which is neither slow nor tumultuous, but which is fairly light and provides a pleasing, but not distracting, accompaniment. If possible, try and match the tempo of your pictured action with the music that accompanies it. To some extent, you can sometimes help an overly slow-paced travelogue by scoring it with gay, fairly quick-paced music. Oddly enough, though, the reverse of this idea does not work out well.

With a little practice, you'll find you can usually improvise very acceptable scores for almost any type of picture with only a few records, if you're given a hint as to what type of film a picture is. But if you can, it is best to plan each score beforehand, making a list of records and music-change cues, so that the score can be re-used. Certain records should be used for certain films, and catalogued not only individually but as a complete score, for future reference.

The scoring of a film should be done very carefully. Probably the most important single factor to keep in mind is the necessity of keeping the musical score always an accompaniment, and not a feature in itself. For this reason, always try to keep your entire score to one type of instrumentation: that is, avoid mixing records played by a military band or dance-band with a score composed of orchestra records, and likewise avoid mixing organ recordings or instrumental solos in with orchestral or band record scores.

Many amateur film-scorers, too, make the mistake of using records of vocal solos or with vocal choruses for scoring purposes. This is something that absolutely should not be done, for the voice

(Continued on Page 322)



# *Certified Sound* **IS HERE!**

It's a new System for sound recording in 16mm. which will produce results of higher quality. Controls have been simplified, new features have been added, convenience of operation has been emphasized and portability improved. Now, with **CERTIFIED SOUND**, anyone can turn out clear, clean-cut sound films, with results comparable to those of theatrical or similar systems. We offer **CERTIFIED SOUND** as a most important aid in meeting the nation's need for speedy training—in the armed forces, in industry and in education.

It is logical that J. A. Maurer, Inc. should introduce **CERTIFIED SOUND**, which brings such a striking new concept of quality and convenience to the 16mm. field. We are pioneers in 16mm. sound recording research and our exclusive effort has always been to demonstrate that this economical motion picture medium is capable of the very finest results. **CERTIFIED SOUND** is the realization of this.

**CERTIFIED SOUND** is a System, involving the use of new and improved apparatus. Here are some of the reasons why **CERTIFIED SOUND** is better:

## **Details of the B-M Model 501-D Recording System for CERTIFIED SOUND**

**IMPROVED SOUND QUALITY.** The new recording amplifier incorporates the *compressor circuit*, which makes sound level control almost automatic. The sound track is more fully modulated and the result is better volume and reproduction quality. The recorder is equipped with the new Type G galvanometer, which gives better exposure on the film.

**EASE OF OPERATION.** **CERTIFIED SOUND** controls are simplified and centralized; the entire System is operated and controlled from one panel. The suppression of ground noise is automatic. A microphone control and three other inputs are provided so that sound effects, musical background from records, etc., can be combined while recording.

**PORTABILITY.** **CERTIFIED SOUND** establishes new standards in compact, lightweight apparatus. The recording amplifier, anti-ground noise control am-

plifier, high and low pass filter system and indicating meters are all built into one lightweight case. The only remaining components of the System are the recorder, power supply and microphone.

**FLEXIBILITY.** **CERTIFIED SOUND** operates entirely from the ordinary A-C power supply, or can be battery operated for field work. Simplified cable connections make it impossible to make errors in connecting up. Synchronous motor operation of the recorder provides for synchronous sound and picture production of the highest quality, in conjunction with the B-M Silent-Pro Camera.

These are just a few outstanding features of the new **CERTIFIED SOUND** System. To get the complete details, send for our Technical Bulletin No. 102, describing the Model 501-D Recording System for **CERTIFIED SOUND** and learn how easily and effectively **YOU** can take 16mm. sound pictures.

**J. A. MAURER, Inc. • 117 E. 24th St., New York, N.Y.**



# Among The Movie Clubs

## Films For Exchange

Two excellent films, available for Inter-Club exchange, have been received for review this month. They are:

**CLOSE-UPS** (200 ft. 8mm., black-and-white). A particularly excellent documentary film showing how the magazine of a progressive amateur movie club is produced. The effect-lightings indicating the way these cine-clubbers burn the midnight kilowatt to bring the magazine into being are particularly noteworthy. Members of clubs which correspond with the group will also be interested in seeing what the various individuals whose names they've seen so often look like.

**PICNIC DAZE** (400 ft. 16mm. black-and-white; also available in 8mm. version). A clever comedy of an artist's misfortunes when dragged to a very boistrous picnic. This picture, while perhaps not so smooth technically as "Close-ups," (it appears to be an earlier production) is a decidedly better than average comedy. Gags and timing are both markedly superior to those encountered in the average amateur comedy.

Both films are available from the the 8-16 Movie Club of Philadelphia, George Burnwood, Exchange Officer, 3035 Disston St., Philadelphia.

## L. A. 8's See "Fire From The Skies"

Outstanding feature of the June meeting of the Los Angeles 8mm. Club was a special showing of the Long Beach Cinema Club's civil defense film, "Fire From the Skies," a 16mm. Kodachrome sound-film dealing with incendiary bombs. The picture was voted as being one of the finest works of its class ever viewed by the Los Angeles 8mm. Club, and hearty congratulations and thanks were extended to the Long Beach Club's representatives for making this preview possible.

Through the courtesy of Honorary Member Bill Stull, the Club next saw "Close-ups," a fine 8mm. documentary made by the Philadelphia 8-16 Club. Harry Markin, present as a guest of Marshall Crawshaw, showed "The Night Before Christmas," a really unusual 8mm. Kodachrome scenario film, embellished with trick photography and synchronized sound-on-disc. Fred Evans, Art Callow and Adolf Apel showed films, and Claude Cadarette delivered a capable talk on continuity.

GERTRUDE MILLAR, Secretary.

## "Wonder Film" For Metro

Highlight of the June meeting of the Metropolitan Motion Picture Club of New York was a new surprise epic "Wonder Film," by the redoubtable Joseph Hollywood. Next was scheduled "Nickel Town," a study of the "big city" in terms of the lowly but important five-cent piece, produced by the New York 8mm. Club. "Spring Festival," loaned by Francois Audibert, of New Orleans, and Ernest Kremer's new picture "Flowers," were scheduled to complete the movie program, and a slide-film, "What About Air Raids?" loaned by the New York Telephone Co. ended the evening on a timely note.

FRANK E. GUNNELL.

## Zoo-Pic Contest for 8-16's

The June meeting of the 8-16 Movie Club of Philadelphia had as its scheduled highlight a novel contest, that to determine the best film shot at the local zoo by members of the club, with a \$5 prize for the winner, and abundant glory (but no cash) for second and third prize winners. A talk on animal photography by a member of the zoo staff was also scheduled.

LEON MERROW.

## Exchanges For Long Beach

Through the courtesy of THE AMERICAN CINEMATOGRAPHER, the June meeting of the Long Beach Cinema Club had the privilege of seeing four excellent films from three other clubs. These included "Picnic Daze" and "Close-Ups" from the Philadelphia 8-16 Club; "The Haunted School," from the Syracuse Amateur Movie Makers Association; and Fred Ells' prize-winning Kodachrome, "New Hampshire on Parade" from the Los Angeles Cinema Club. Programs like this, which give us a chance to see what the other fellow does, makes us feel that the projected National Association of Amateur Movie Clubs is a very worthwhile idea.

PRUDENCE BRAKLOW,  
Secretary.

## Minneapolis Nominates

Scheduled highlight of the June meeting of the Minneapolis Cine Club was the election of officers. Official nominations included Falconer Thomas, nominated for President; Fred Grabow and Dr. Cy Hansen, Vice-Presidential nominees; William Weber, nominated for Secretary; and Oscar Berglund, for Treasurer.

## University Wants Horse Films

The University of California, Visual Extension Div., at Berkeley, California, is making an instructional 16mm. film on "The Evolution of the Horse," and are in need of additional scenes—16mm. Kodachrome only—which they feel may be found among the film-libraries of horse-loving cineamateurs. The scenes needed include scenes of horses at work on cattle-ranches, including roping cattle, round-ups, cutting out stock, etc. (but not commercial rodeo scenes!), preferably with pictorial desert backgrounds; typical "desert rat" with his burro and outfit, mountain or desert background; scenes of mules working, plowing, hauling, etc., including 20-mule team shots; pictorial shots of horses being ridden, worked, etc., in desert country, with range-riders, cowboys, mounted guards, and the like; pack-horses in trains, being packed and unpacked, along the trail, etc.

While the University cannot give screen credit for the scenes used, all films received will be acknowledged, and any not used will be returned, if the donors so request. For further information address Jack Robinson, Visual Extension Div., University of California, Berkeley, California.

## Auricon RCA Licensee

The E. M. Berndt Corporation of Hollywood announces the signing of a License Agreement for the manufacture of Auricon 16mm. sound-on-film Cameras and Recording Equipment under patents and inventions of the Radio Corporation of America ("RCA"), General Electric ("GE"), and Westinghouse.

## Record Library

(Continued from Page 320)

and words immediately distract the audience's attention from the picture to the musical accompaniment.

For the same reason, a cardinal point in building a good picture-score is to use music which is not too familiar to the audience. A familiar tune always jumps from its proper place as an accompaniment to the picture, and intrudes—often with strictly personal associations—into the forefront of the audience's conscious attention. This, by the way, is a chief objection to using popular songs and dance-music for scoring purposes.

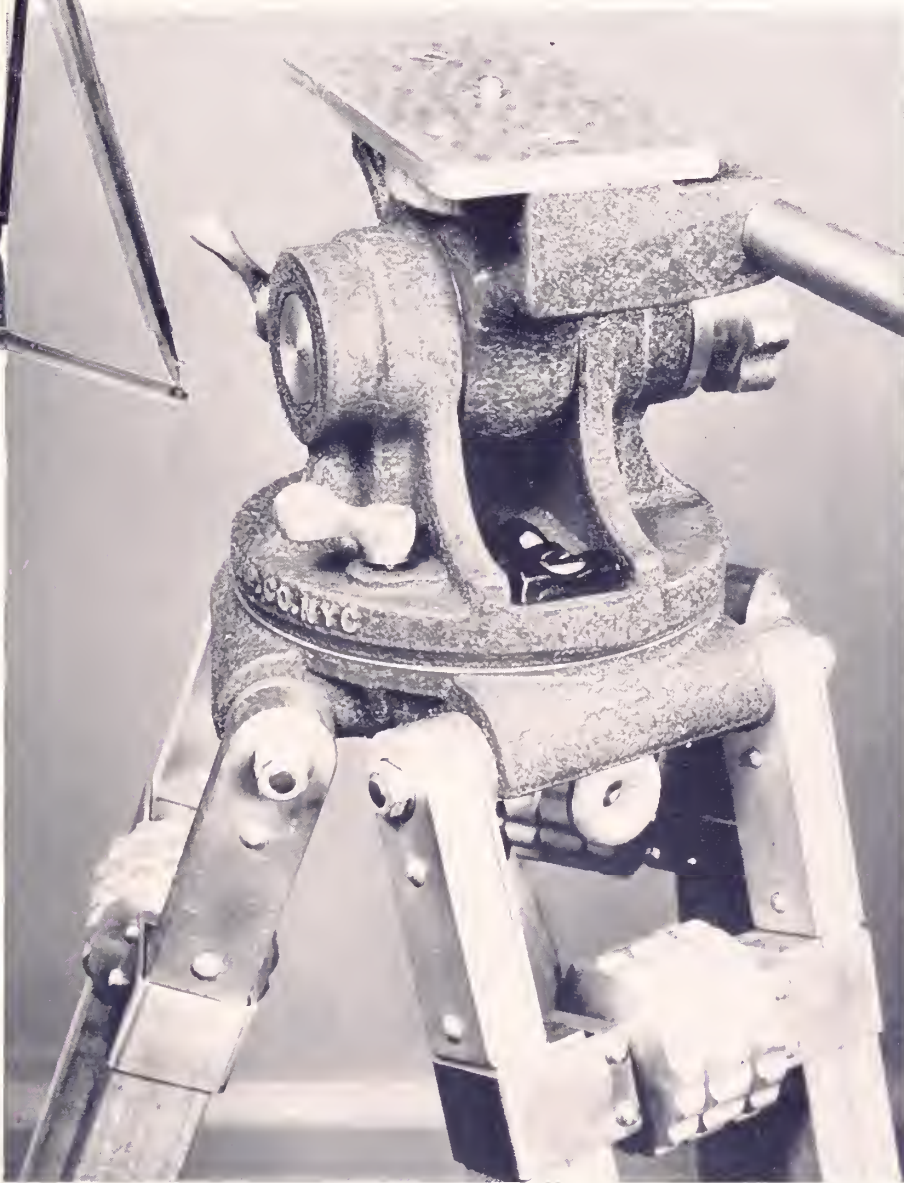
It is best, too, to keep your scores as simple as possible. It is very nice to have a score in which the musical mood changes with every change of mood, action or locale in your picture: but performing that score in the dark, while you project the picture before an audience, is a very different matter. You are more than likely to miss cues, and get things generally balled up. Much better to keep your score as simple as you can, letting each record accompany as much footage as it possibly can, and changing records only when you have to. The audience should not be conscious of record-changes and musical transi-



# "PROFESSIONAL JR." TRIPOD



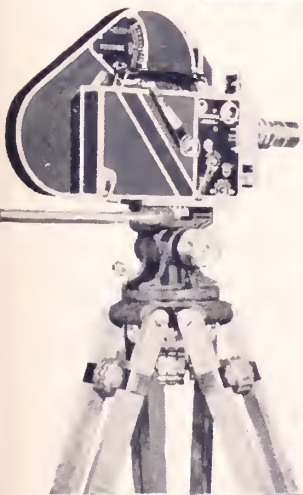
Collapsible and adjustable telescoping metal triangle. Extends from 16 1/2" to 26 1/2". Has wing locking nuts for adjusting leg spread and stud holes for inserting points of tripod feet. Triangles prevent damage, insure cameramen that their equipment remains in correct position and will not slip on or mar any type of surface.



★ The new "Professional Jr." tripod is unsurpassed in quality, versatility and rigidity. Top plate can be set for 16mm E.K. Cine Special with or without motor; 35mm DeVry and B & H Eyemo and construction assures super-smooth action of the friction type pan and tilt head. Quick, positive-action locking knob controls leg height adjustments.

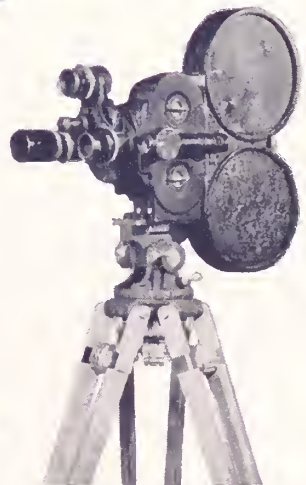
***Tripod Head Unconditionally Guaranteed  
5 Years. Write for Descriptive Literature?***

"Professional Jr." tripods are being used by many leading Newsreel companies, 16mm and 35mm motion picture producers and the U. S. Government, Signal Corps, Navy Department, and Coordinator of Information for important sound and silent work.



16mm Eastman Cine Special mounted on "Professional Jr."

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35mm Eyemo with motor and 400 ft. magazines mounted on "Professional Jr."



tons, but aware only that the musical accompaniment increases their enjoyment of the picture.

In achieving this perfection, the choice of appropriate music and perfect technique in performing the score are not the only vital factors: you will find that if the score is important to the picture, the picture is also important to the score. A picture that has been well and smoothly edited is an easy one to score; the difficult ones are those which have not been well edited. It is a favorite comment of the Editor of this magazine who, with his extensive record collection, has done a great deal of picture-scoring, that he would much rather score a reduction-print of an eight-reel professional feature like "The Covered Wagon," "The Last Laugh," or "Intolerance," than the average amateur's single reel of 16mm. or 8mm. The reason is that the professional film has been edited into clearly defined sequences, with an eye to definite visual or pictorial rhythm as well as dramatic moods, while the amateur film is too likely to be a hasty assemblage of almost anything, badly edited and with no thought to visual smoothness.

Though most amateurs have something of a record library, many of them seem still pretty much at a loss as to just what records are most appropriate for picture-scoring purposes. I hope that the accompanying list of records I have used for this purpose—all easily obtainable from RCA-Victor—will prove helpful. In each classification, I have listed several different pieces, so that sufficient variety will be available. However, if you're starting a scoring library, you can of course begin by buying only one or two discs for each purpose, and adding the others as occasion demands. Most of these records list at \$1.05 each, though some are priced as low as 53 cents; the 50 records listed represent a total investment of only \$47.91—and properly used, they'll add much more than that to the enjoyment of your pictures.

#### Sound Effects Records

The following records are primarily suited to the needs of amateurs. These records are ten inches in diameter and are recorded the same on both sides giving double amount of wear. The recordings are made at 78 R. P. M. and the individual effects last from one to three minutes, depending on the type of sound. Each effect is separated by blank spaces which enables the operator to pick out the effect desired with no difficulty. These records cost \$1.50 each.

Record No.	Effects
SE-1	1. Fire Alarm Bell 2. Telephone Bell 3. Fire Engine Bell and Siren
SE-4	1. Train Whistle 2. Steamboat Whistle 3. Steam Escaping
SE-6	1. Thunder 2. Carnival Scene
SE-7	1. Train Starting 2. Train Running 3. Train Stopping

SE-13	Aeroplane Taking off and circling
SE-14	Machine-Gun
SE-15	Wind Effect
SE-17	Whistling Effect Aeroplane falling
SE-18	Tank Effect
SE-21	Horses hoofs—Turf (Group) Horses hoofs—Turf (Single) Horses hoofs—Cobbles (Group)
SE-22	Machinery noises—constant Fire cracking—constant
SE-39	Bombardment Machine-Guns Tanks
SE-41	Wind Howling wind Rain and wind
SE-42	Thunder Storm Sea Effects Running Brook Water lapping against boat
SE-43	Works Siren Klaxon horn Electric horn Taxi horn Steamboat Siren
SE-2	Dog Bark Baby Crying Angry Mob
SE-3	Mixed Cheers Mixed laughter Applause
SE-9	Boos and Hisses (Mixed Voices) Wails (Mixed Voices)
SE-12	Idling Motorboat or aeroplane motor.

## Indian Documentary

(Continued from Page 317)

fifty feet when a big Indian appeared at my side with the suddenness of light. He had a message and it was short. I was to get out at once. No pictures. The message was from the Chief who was on the next island.

Feeling sure the old man did not recognize me at that distance I went over to where he was fishing.

"No pictures, too much money," was his reply in answer to my greeting. He had forgotten all about me and besides he was remembering past encounters with newsreel cameramen. It seems many times in the past he had given permission to these men to take pictures when they promised to show them in Washington and plead the Indians' case.

The Chief had found out these men had not kept their promises. In fairness to all concerned it should be said here one firm had paid all of seventy-five cents for permission to take some shots. I'm reliably informed that from now on anyone desiring to photograph these people had better plan on paying a fee for this privilege!

The old man moved away from me but I followed close at his heels pleading my case. An interpreter was called in and read my script to the Chief. I saw he was considering the matter in his own deliberate way. Once more he remarked "Too much money".

Since I had never intended to put the

picture up for sale, realizing my own limitations, I finally overcame his objections with an offer to sign a contract. By the terms of the contract I would turn over to him and his people all funds collected in any way from sale, rental or showing the picture. In return for this he was to give me written permission to take any pictures I deemed necessary to tell the true story.

It was late afternoon before we had the papers ready, but I took a few shots to kind of start things off. Then the drive home and a wait of a few days before I could go up again.

On my next trip, I finished the fishing shots and turned my attention to the village proper. Here I was met with disappointment. Although the Indian men did not object to being filmed, their families ran whenever I came into sight. I knew better than to follow them. It was here that I sincerely missed having a four or six-inch lens!

Permission was finally given me to go into one of their houses. The women were told it was all right for me to be there. The babies never seemed to understand. I couldn't get close to them. It was so dark my meter, a Weston Cinemeter, registered only by the faintest flicker.

Working as fast as I could, and depending on Super-XX to do its usual miracles, I stopped abruptly when an Indian woman, knife in hand, objected to my pointing the camera at her. Well, I know when I'm not wanted!

I found the tripod very much in my way at times. Shots were continually missed due to the time needed in making a set-up. After a bit I used a camera-handle, shooting at a speed of 24 frames per second. Even then there was too much movement in some of the shots where I was working outdoors in a stiff wind.

It was here that I realized that in making a picture of this kind where it is impossible to create your own situations, a hand-held camera is the only thing. What if there is a little movement, as long as the shot is recorded as you want it?

Because of this, wipes, fades, and other special-effects were eliminated. It is my belief that in the future I'll eliminate all special-effects in the shooting and then install them in the dupe by optical printing. This will eliminate the worry, fuss, and bother of needless gadgets.

Using the picture of one of the shacks as a background I used titles printed on celluloid by Cliff Newlands in Hollywood, who does all of this work for me.

In writing my titles I felt the best way to approach the subject was to write them so that they, by themselves, told the story completely.

A sequence of the original treaty was cut out. Not very legible, it was felt that some of the struggle of these people could be told better if findings of fact in a court action were used instead.

In an attempt to show these people were not the dirty savages most casual travellers think them, I used several



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shots of drying clothes, hoping this would do the job.

Here are some of the high-lights of what I learned in making this film:

1. Be sympathetic with your subject-material.
2. Be sincere with your players.
3. Keep your equipment mobile.
4. Familiarize yourself with the actions of your players so you can anticipate situations and desirable shots.
5. Be thorough in your research. There are more than two sides to every problem.
6. Make sure you need that shot before you press the button. This will save you money.
7. Make arrangements beforehand—in writing—for permission to make your picture.
8. Take your time.

Then you may come out with a picture which, viewed strictly as a picture, is not only a bit out of the ordinary, but one which will also do something helpful for the subjects who cooperate with you in putting their story on the screen.

## Police Movies

(Continued from Page 316)

dents. And before long, the Traffic Education Unit found itself the proud possessor of a 70D-A Filmo, an Amprosound projector, and all the necessary accessories including a year's supply of film and official instructions to go ahead and make movies on traffic safety.

Sergeant Sheldon made the first film himself, virtually single-handed. And in doing so, he learned from hard experience that while pictures like this *can* be made by one man, doing them really well calls for the coordinated services of several. There's a man-sized job in just organizing the making of a picture—seeing to it that story ideas and treatment receive official OK's, that equipment and people are assembled at the right time and place so that each scene can be shot, and, in fact, coordinating all of the innumerable details which

must be knitted skillfully together before a camera can turn. He learned, too, that handling the actual direction and photography is another man-sized task, and one which, for best results, ought to be in the hands of someone who doesn't have to worry about whether or not Sam Smith and his Blue Chevie will be on deck at 9:45 tomorrow morning on Los Feliz Boulevard to shoot such-and-such a scene.

It was at about this time that Sheldon discovered Dan Phillips. Dan was primarily a still-photographer, but when they turned him loose with the Filmo it was soon discovered that he had a natural instinct for cinematic expression—particularly cuts, timing and camera-angles—and a flair for directing that's a good deal better than you see in most directors of 16mm. commercial films. And right across the desk in the Traffic Education Unit's office, Sheldon discovered Jim Glavas, who does a better-than-average job of writing scripts and narration.

So they teamed up. The way they work now (and have on two increasingly successful productions) is that they collaborate on evolving a filmable story which will help them get over some needed point in traffic safety. Then Sheldon gets official approval and starts the flow of men and equipment going.

Meantime, Phillips breaks the story down into a definite camera-continuity, and takes care of the actual shooting. The actors are usually fellow-officers (sometimes in uniform, sometimes in civvies, as the action may require), supported by their wives, families and friends. In the latest picture, "Foot-Faults," the RKO studio "loaned" Kay Kyser and Sally Wadsworth to lend professional humor and eye-appeal to the police film.

When shooting is over, Phillips stows his camera away in its locker, and takes over the job of editing the picture, while Jim Glavas busies his typewriter with turning out an appropriate narrative.

As soon as these tasks are completed, the producing triumvirate "preview" the picture for Captain Parker, reading the narrative through the Amprosound's microphone. And when Captain Parker feels the presentation is correct, the three tackle the making of the sound-on-film recording. Sometimes this had been done on the Berndt-Maurer recorder used in the Cinematography Department of the University of Southern California. On other occasions, the recording has been done by a commercial 16mm. sound-film organization—Telefilm. And once, the original recording was done on a carefully synchronized acetate disc, and then re-recorded to film.

Finally, the picture is completed, and a composite sound-and-picture print made. Then it is ready to go out with the Unit's several speakers, to be shown to clubs, lodges, PTA groups, school traffic-safety classes and organizations, and in general to prove its worth by actually making people think of the importance of driving and walking safely.

Often a single print may receive three or four widely-spaced showings within a single day. All told, thousands of Angelenos have seen these films, and absorbed their lessons in safety.

The results—? Well, the pictures must certainly have hit their mark, for they have become increasingly in demand, and have elicited favorable comments at every showing. They must be successful, for requests are coming in from police forces in all parts of the country, asking for showings of the Los Angeles films, and one of the best-known distributors of 16mm. educational subjects has undertaken to make these and future productions available nationally. And future productions there will be! Plans are already under way for several, some of which may well be shooting soon after this appears in print. As if that wasn't evidence enough of success, the Traffic Education Unit's new headquarters, now being completed, have provision for rooms which will be exclusively devoted to projection, to cutting, title-making, and even to shooting interior scenes.

Phillips and Sheldon feel the possibilities of police movie-making are only just begun. "Police Departments everywhere have a bigger, harder job than ever, with the war on," they point out. "Especially in cities which, like Los Angeles, have tremendous new traffic problems created by war industries, and which may at any time be complicated by wartime emergencies. Movies such as we're making can help solve these problems by bringing home to the public—adults and children alike—what we policemen are trying to do for them.

"We hope that what we've done will be just a start, and that the Police Departments in the other large cities will find it possible to follow suit, making pictures adapted to their specific problems.

"And while the police in smaller cities may not be able to do this sort of thing themselves, we hope that maybe the fact that we've made these pictures, working with amateur equipment and pretty well as amateurs ourselves, may suggest to individual amateurs and members of amateur clubs throughout the country that they can do their fellow-citizens a real service by helping their police make pictures which will help make wartime America more traffic safety-conscious!" END.

## Golfer's Wife

(Continued from Page 315)

but you can read "PRESENTS ULTIMATUM!"

Scene 29-a: Continuation of Scene 29. Marge definitely gets an idea, and looks determined. SLOW FADE OUT.

Scene 31: SLOW FADE IN: Close-up of living-room clock. Hands point to 6:00.

Scene 32: Two-shot, Marge and Joe at dinner-table. Marge is talking, Joe trying to edge in excuses.

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Scene 33: Close-up of Marge, talking.  
**Title:** "I'm tired of being left alone. You'll have to teach me how to play, too!"

Scene 33-a: Continuation of Scene 33. Marge finishes speaking.

Scene 34: Close-up of Joe. He shows relief, and nods agreement. **FADE OUT.**

**Title:** (FADE IN) **THE NEXT SUNDAY.** (FADE OUT.)

Scene 35: **FADE IN.** Long-shot, at First Tee. Marge and Joe walk in. He tees up her ball, and shows her how to swing, then, after pointing direction of hole, steps aside. She gets off a nice, long drive.

Scene 36: Close-up of Joe. He registers amazement.

Scene 37: Close-up of Marge. A faint look of disappointment crosses her features.

Scene 38: Medium long-shot. Joe drives. The ball goes only a few yards. **WIPE TO:**

Scene 39: Medium long-shot on green. Marge's ball is closest to the pin. She sinks it in one putt. Then she holds the flag while Joe takes three to get in.

Scene 40: Close-up of score-card: Joe's hand marks down a 3 for Marge—a 6 for himself.

Continue these scenes *ad lib* throughout the round, adapting the action to the requirements of your golf course. All the way through, Marge plays like a champion, and Joe does everything wrong. He hooks and he slices; his ball lands plop in the water-hazard, gets caught in the sand-trap, and so on. His putts are terrible, while Marge's are wonderful. All through it his score grows, while hers stays down in the threes and fours, with maybe a hole in one. And all through it, you see Joe slowly changing from amazement to being hot and flustered. Marge, on her part, seems to be growing increasingly irritated. Finally, on finishing the last hole:

Scene 70: Close-up of score-card, as Joe totals up a two-below-par score for his wife—and a 107 for himself.

Scene 71: Two-shot: Joe shows the score to Marge.

Scene 72: Close-up of Marge. She's definitely unhappy about something. She speaks.

**Title:** "I'm sorry I'm such a dub. Do you think I'll ever learn to get a nice, high score like yours?"

Scene 73: Close-up of Joe. His jaw drops his eyes roll with amazement. Suddenly he falls straight back out of the picture. **QUICK FADE-OUT.**

**Title:** **THE END.**

## Diffused Lightings

(Continued from Page 314)

folks sunburn on a cloudy day—that's the infra-red that seeps through the clouds unnoticed visually.) This excess

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of the ruddy end of the spectrum will naturally give your picture a ruddy tinge—not so great as you get when you try to shoot Kodachrome just before sundown, but quite ruddy enough to be decidedly displeasing if you're at all particular about the color-balance of what you put on the screen.

But where the sun is screened—rather than hidden—by an overcast of comparatively light haze, you've got the ideal natural condition for making flattering Kodachrome close-ups. Try it!

If you're one of those filmers who like to work on scenario pictures, you should be in a position to use more professionalized equipment. I've known plenty of amateurs, both individuals and clubs, who specialize in scenarios and make use of such professional accessories as reflectors, and even dollies and microphone-booms. People who do their filming on that scale shouldn't have any trouble at all in making and using some of the simpler gadgets we professionals use to diffuse sunlight. Luckily, in these days



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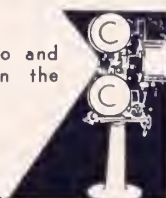
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of priorities and rationing on everything from the camera you'd planned on buying this year to that second lump of sugar in your coffee, these gadgets can be made at home, with nothing more than a few pieces of wood, some nails, nuts and bolts from the dime store's as yet unrationed stock, and some cloth.

Professionally we often use overhead scrims—big panels of muslin or gauze netting suspended on ropes over the area in which our action occurs. And I mean big: I've seen some a hundred or so feet square. These are rather obviously out of the range of most amateur filmers.

But we also use smaller ones. I've used some which were perhaps eight or ten feet square, and instead of being suspended overhead, were attached to wooden poles—1x1's, perhaps ten feet long. These scrims would be held upright by the hands of a couple of husky studio "grips," and placed so that they diffused the light falling on the principal players.

Sometimes these scrims are stretched on a rectangular wooden frame, which is attached to a pair of wooden uprights so it can be held in place at any angle over the heads of the actors, or between them and the sun. Contradictorily enough, we often use "booster" spotlights under and around these scrims to pinch-hit for the sun in producing the back-lighting and often the modelling lighting we want. It may not be as strong as direct sunlight, but it's softer, and more controllable!

Another and simpler type of scrim is used when we are making a comparatively close shot of only one or maybe two people. The diffusing material is stretched over a hoop perhaps three or four feet in diameter, and the hoop, in turn, is mounted at the end of a pole, by which it can be held in any position necessary to diffuse the light on a person you're close-upping. This gadget is very easily made, and can, of course, be built in demountable form, so that you can take it apart and transport it anywhere in the back seat or luggage-compartment of your car—if you're

lucky enough to have the gas and tires to drive with!

As to the fabrics for use in these diffusing devices, you've a rather extensive choice. Sometimes we use white muslin. Sometimes we use a fairly fine-mesh black gauze netting. Cheesecloth, which is easily obtainable almost anywhere, would be very good, either in its natural state, or dyed black. And of course you can fit the diffuser to the effects you want to get by using either a single layer of cloth or making it a double or triple-layer scrim.

At any rate, I'm very sure that if you once try this idea of using diffused lighting for your closer shots of people outdoors—especially in Kodachrome—you'll never again attempt to photograph color close-ups in harsh, direct sunlight. You may think your girl-friend is young enough and pretty enough so that direct sunlight only makes her look even prettier. But make a comparative test—two shots, one in direct sunlight, and one in diffused sunlight—and you'll see why we professionals use diffused light even when we're Technicoloring the industry's top "glamor girls" outdoors! **END.**

## Gasless Vacation Movie

(Continued from Page 313)

With a few similar shots, showing yourself changing reels, and your wife commenting on other well-remembered vacations, which of course call for the running of other reels, you can bring in filmic reminiscences of as many other vacations or vacation-spots as you wish.

Finally, you can end your picture with a shot showing the lights coming up, followed by close-ups of your wife and yourself remarking, via title, that even if rationing prevents you from going a-vacationing this year, your movies make it possible for you to re-live past vacations—and as yet there's no rationing of movie memories.

Which is perfectly true! **END.**

## Mike Boom

(Continued from Page 311)

place to place, you can make this upright from a single piece of lumber.

But in mine, I used two pieces of 2x3 1/4" stock, each 3'6" long. As you'll see from the drawing, drilled a 1/4" hole at the end of one, (the lower one), along the center-line, and another hole, located near the edge, about 3 1/2" below it. At the end of the other member, I made a 2 1/2" slot along the center-line, and two smaller slots or notches, as shown, in the end and side of the board.

The two pieces are held semi-permanently together by a 1/4" bolt which passes through the center-line hole and slot. Through the off-center hole in the lower piece I ran a 1/4" bolt fitted with a wing-nut and washer. When the standard is set up, this bolt fits through the slot in the end of the upper member, and the wing-nut locks the two sections rigidly together. But by loosening the wing-nut and sliding the upper member a trifle upward, the two sections can be folded.



In the folded position, the slot in the edge of the upper section engages the locking bolt, and by tightening the wing-nut the two members are locked in the folded position. Another wing-nut and bolt fastens the two legs forming the base together, and locks them in either the opened or closed positions.

There are several refinements you can add to this gadget if you want to. For instance, you can simplify the maze of trailing lamp-cables that always bother us when we shoot interiors if you mount a two-outlet box on the upright, and extend a single feed-line down from this to a connection (a male one is safest) in the base, into which, in turn, you can plug a single feed line.

And since directing the photography of our Club's recent Civil Defense picture, "Fire from the Skies," where we had to build an overhead scaffold to carry lamps to illuminate a rather large and deep set from above, I've felt the need of another accessory to this lamp-stand. Begin with a pair of these stands. Then make yourself a pair of longer upper members which can be fitted in place of the regular ones. Since the original sections are 3'6" long, you'll probably want to make the extensions at least 4 or 5 feet long. They'll fit to the lower members in the same way as the regular ones do.

But at their upper ends, provide square slots, into which you can place the ends of a horizontal cross-member connecting the two upright standards. This cross-bar can be in two sections, folding in the middle the same way the uprights of the lamp-stands do, and for strength, you had better fasten it rigidly to the uprights with a pair of bolts and wing-nuts. Along this, you can place the clamp-on Photoflood units you'll need to give your scene front-lighting and to reach deeper into your set than you can with lamps placed at the sides of the camera field. We amateurs don't often have big sets to light—but when we do, here's one way to light them easily and efficiently. END.

## Stan Cortez

(Continued from Page 305)

in the middle of the scale—that he weakened, or maybe even lost the emotional value of that scene.

"This will probably sound like heresy to the exclusively technically-minded, but as far as I'm concerned, it doesn't matter a bit to me whether a scene prints on light 3 or light 21—so long as I get the visual effect I'm seeking! If I miss that, even though the scene is technically flawless, I consider that I've missed on that scene. After all, the technicians have given us a really remarkable degree of technical leeway in our medium: our modern negative emulsions have much more latitude than most of us give them credit for, and this is further increased by the control possible in developing, and printing. Why not make the most of it, if it will help us in getting the artistic and emotional effects which

are the real *raison d'être* for our picture?

"On the other hand, certain technicalities are inextricably bound up with the artistic and emotional values of cinematography. Some of them—like lighting balance—are obvious; a scene in which the lighting is out of balance is almost certain to distract the audience's attention from the dramatic and emotional values we're trying to convey.

"Another of these factors—and one too often neglected—is observing the proper continuity of diffusion. If we see a sequence in which the star, for example, is heavily diffused, while the intercut long-shots or the close-ups of the leading man show little or no diffusion, we're abruptly jerked away from story, and made—at least subconsciously—aware of the mechanics of photographing it. The same thing applies in a lesser sense to the use of different degrees or types of diffusion on scenes which are to be intercut.

"It can apply to almost every phase of cinematography. Indeed, good dramatic cinematography is not so much 'holding up a mirror to life' as it is holding up a subtly distorting glass to create an illusion that is more realistic than reality itself. Repeatedly we have to do the unnatural thing in lighting, diffusion, camera-angles, perspective or filtering to create an impression of dramatic realism.

"Indeed, the definition some famous actor—I think it was George Arliss—once gave of acting, could very well be

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applied to dramatic cinematography. He said it's 'being unnatural—without getting caught at it.' And that is what we cinematographers must do. We try to convey the impression that our camera was somehow privileged to eavesdrop on a group of real people undergoing some actual experience. To get that impression, we must often make use of every technical trick and artifice at our command, even though we may be forced to do things that seem unreal, or violate established technical conventions. But as long as we convey that impression of realism, and point up the dramatic and psychological aspects of the action, we're succeeding in our work!" END.

**16mm. Print Problems**

(Continued from Page 304)

and specks on originals is not sufficient reason to decide in favor of reversal over negative, but it is one added advantage which reversal can claim for its case.

The same argument presented above for dust spots also applies to film splices in 16mm. Splices are less noticeable in prints from reversal or Kodachrome originals than from negative originals, and for the same reasons that dust particles are less noticeable.

In 35mm., the frame-line is so wide that it is a simple matter to make a splice between frames which will not be visible on the screen. In 16mm. film, the space between frames is so very small that it is impossible to design a lap-over splice which does not cut into the picture-area. As a result, a dark line appears at the splice which prints white from negatives and black from reversals.

The principal advantage that reversal processes offer over negative in editing, is that fades, dissolves, wipes, double-exposures, etc., can be put in when the duplicate negatives are made from the reversal original. The process of inserting fades, dissolves, wipes, etc., involves double-printing with complementary masks (as described in detail in a later article) which requires that three films—the mask, the original and the raw-stock be run through the printer simultaneously. After the first printing with three films is completed, the raw-stock must be exposed a second time using the complementary masks, and a complimentary original.

Since this method of double-printing with three films is rather involved, it is most convenient if it can be done only once or twice in the making of one or two duplicate negatives from which all further release-prints are made. After the fades, dissolves, wipes, etc., have been printed on the dupe negative, all the masks, complementary originals and double-printing can be dispensed with and release prints can be made in a single operation by contact printing.

If this method of making fades and dissolves is used with original negatives, the process of double-printing with three films must be repeated each time that a release print is made. This extra handling increases the cost of release-prints made from original negatives but does not materially increase the cost of release prints from reversal originals.

If a 16mm. reversal fine-grain negative duplicating stock is ever manufactured, of course this process of double-printing with three films could be done in making the reversal duplicate negatives from original negatives. Then release prints could be made in one operation from the duplicate negatives. There is also the possibility that some film manufacture will introduce a fine grain master-positive stock in 16mm., comparable in results to the 35mm. master-positive or "lavender" stocks, from which duplicate negatives could be made with all effects inserted.

However, at present, for films in which effects are desired, it is best to make the "master positive" in the camera on reversal film. If negative film is preferred, then the effects should be inserted at the time of shooting unless only a small number of prints are required and print cost is no item. In the latter case, the same processes can be used with original negatives in making release prints as are used with reversal originals in making duplicate negatives.

One of the principal advantages which the experienced 16mm. producer has over his 35mm. competitor, is the fact that he can produce films in color on Kodachrome for a cost only slightly greater than producing in 16mm. black-and-white, and generally less than the cost of producing in 35mm. black-and-white. In the field of direct selling or institutional films for consumer audiences, the tremendous advantages of producing in color are apparent. Also in many educational film subjects, color adds a great deal to the educational value of a film.

Color is not without its disadvantages, however. Although film and production costs for color do not exceed 16mm. reversal costs appreciably, the problem of lighting for Kodachrome shooting is greatly increased. Kodachrome requires about 10 times as much light for a correct exposure as do the faster black-and-white reversal films. For exterior shooting, this fact adds no problems except the weather. For interior shooting in a studio, no compli-

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cations are introduced except that the heat and intensity of lighting for Kodachrome is uncomfortable for the production crew and the actors.

But for location interiors, the intensity of lighting required for Kodachrome is a very serious limitation because, unless the 16mm. producer has his own portable generator, it is usually impossible to get enough current for anything but close shots. Most industrial plants, offices, schools, etc., where location interiors might be made are usually operating near full electrical load. When a lighting set-up calls for an additional 200 amperes or over 20,000 watts, either the fuses blow out, the wires become dangerously hot or the voltage drops so much that proper color temperature cannot be maintained in the lamps being used. In lighting the same scene for a black-and-white reversal or negative film, 2000 or 3000 watts would probably suffice.

In many sky-lighted factories, there is sufficient daylight for adequate exposure on the fast reversal films such as Eastman Kodak Super-XX or Agfa's Triple-S Pan.

Also because of the complexity of the processing of Kodachrome film, it is not as dependable as black-and-white negative or reversal film. It has frequently happened that the shooting of an entire location trip has been ruined in processing, necessitating expensive and embarrassing retakes. With black-and-white negative or reversal films there are very few things that can go wrong because the processing is very simple compared to Kodachrome processing.

Another disadvantage of Kodachrome film production is the comparatively high cost of duplicates. Satisfactory Kodachrome prints cost about five or six times as much as good black-and-white prints.

So far it has not been possible to get a satisfactory Kodachrome duplicate from another Kodachrome duplicate. This means that all prints must be made from the original, so there is a definite limit to the number of prints that can be made from a Kodachrome production. Since the original must be used for all printing, it eventually becomes worn and abraded scratched and dirty so that further copies cannot be made from it. The practical limit of prints from a Kodachrome original is in the neighborhood of 100 to 150 on existing printing equipment. For commercial films, this is generally no problem because few commercial sponsors need this quantity of prints. For educational films however, it is conceivable that 500 or more prints of a subject could be sold; this is beyond the capability of a single original to print.

However, during the past year certain developments have occurred which make it possible for the producer who needs a great number of release-prints from a Kodachrome original to at least partially circumvent this difficulty. Two processes are now commercially available which

make 16mm. color-prints from black-and-white separation negatives as is familiar in 35mm. color work. These processes—Cinecolor and Gasparcolor—are available in either two-color or three-color versions. In each, selectively-filtered color-separation negatives are made from the Kodachrome original, and the release-prints made from these negatives. In the Cinecolor method, the print is made on double-coated positive stock, which is developed and subjected to the usual dye-toning operations of the Cinecolor printing process. In Gasparcolor, the printing is done on a special, multi-layered positive stock, as described in a recent article in THE AMERICAN CINEMATOGRAPHER.

The result, in either instance, is to make possible the production of an almost unlimited number of release-prints in color from a Kodachrome original. In strict accuracy, it must be admitted that the results of these processes do not always result in an absolutely perfect duplication of the color-rendition of the original Kodachrome. But the result, where three-color printing is used, is a decidedly acceptable color print which in most cases will prove adequate where no direct comparison with the Kodachrome original is involved. The same, it must be observed, applies to direct Kodachrome-to-Kodachrome duplications, as well.

In addition, excellent black-and-white duplicate negatives (or reversal duplicates) can be obtained from a Kodachrome original where monochrome release-prints may be desired. Many producers of educational pictures take advantage of this to enable them to provide release-prints of their picture in color, for institutions able to pay the necessary price, and in monochrome for outlets not able to pay the added cost of color. Quite a few commercial producers, also, have used this method of photographing the original in Kodachrome and making release-prints in black-and-white because they feel it gives them a finer-grained release-print than is obtainable otherwise with the 16mm. laboratory facilities available to them. (To be Continued.)

## Animated Cartooning

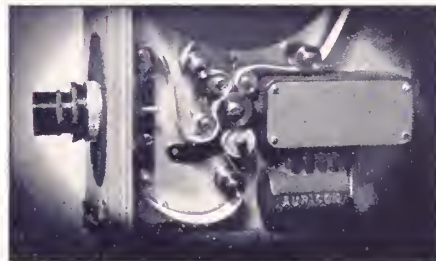
(Continued from Page 303)

convenience, effects are generally animated on a cell level separate from any of the characters. If effects are to directly contact a character, the animator handling the character will usually suggest roughly the placement of such material, but leaves the exact drawing and timing up to the effects animator. There is just as much of a problem in animating a stream of water to look and act like water as there is in registering a convincing feeling of surprise on the character it hits.

Effects are looked at in sweatbox showings in the "rough", just as character animation, and judged similarly. If the action looks okay, the go-ahead signal is given for cleanups and final in-betweens, and when these processes are completed, a last test is shot of the en-

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tire scene, for a final checkup before moving it on to the inking and painting departments. Very rarely are any radical changes suggested when a "cleanup test" is viewed by the director, and such changes as might result generally concern minor alterations in timing or camera moves. All of the factors of a scene have been pretty thoroughly combed-over by the time the animation reaches cleanup stage, and from there on in it's the home stretch without interruption, winding up under the Technicolor camera.

However, with the possibility of change always present in a creative product such as an animated cartoon, no one concerned with production completely uncrosses their fingers until the picture is actually jerking through the projectors in the theaters!

(The final phases of cartoon production—inking, painting, photography and re-recording, will be outlined in a succeeding installment.)

**Documentary Films**

(Continued from Page 299)

himself. But this is such a basic necessity for the quality of your film that you must enforce the rule even though it hurts you. I find an instance of this in my Chinese diary:

"April 13, 1938.

"The ambulance corps does not have enough stretcher bearers so that the peasants of the villages work in relays, taking the wounded from their village to the next, where those peasants in turn take them, and so for miles and miles. The base hospital is far, and there are no roads. We film this.

"I asked Dick (the Chinese interpreter) to try to have the bearers and the wounded not look too obviously at the camera. He doesn't respond as he usually does, and the directions he gives are too vague. I see that the picture will not give the audience the feeling of naturalness, so I ask him to be more to the point with them. He refuses and runs away, and we continue the picture as best we can, and use the only three Chinese words I know. Good thing I learned them. *Boo yao kuan*: Don't look this way. It works, but a little mechanically.

"Later, on the way home, I have a long talk with Dick. In a way he is right. He says, 'I couldn't yell at my own people, they fought so hard, got badly wounded. I have too much respect for them therefore I am silent. Directing them not to look would be cruel; I would

like to help them.' There we are! Of course, we also. But our way is to make a good film, to move people by its high professional quality. Then they will feel and understand that the wounded soldier needs a good stretcher for his very life. . . . Of course, objectively, it seems indiscreet and shameless to go so deep into sorrow and private life and emotions, but we learned in Spain and in working with poverty-stricken coal miners of Belgium that you have to do this. It is difficult, I can understand Dick. After filming scenes of wounded soldiers, of terrible things in the villages you are more deeply moved than ever, and the feeling of indignation against the Japanese military setup responsible for this becomes even stronger, and with that the will to do something about it. That is part of the tension which you get back many months later in the cutting-room in New York, alone with all the film material, when you shape it into an artistic form which will make clear what you have to say to everyone in the audience.

"Dick begins to feel that we were not so cruel as he thought . . ."

Back in the cutting-room there is a new set of problems and several new collaborators.

The editor is one of the new working group. His work with the director requires as much team work as the director and cameraman in the field. Although the first job of the editor is to follow the director's directives, the editing process is as creative as the function of the cameraman or the composer. Here the editor must have a sure feeling for rhythm because the quality of the documentary cannot depend on a star or other artificial supports for holding an audience's interest.

If there are any weaknesses in the material the director must confess all to the editor, who is the only one who can help to correct any basic faults. Secrets kept from the editor are a risk to the solidity of the finished film.

All the rushes should be shown to the composer before cutting. To see the material at this time gives him a broad idea of it and also gets him started on the key musical ideas. He will see a journey, a sand-storm, a battle, a pastoral episode, that will certainly need music.

But the silent cutting has to be complete before the composer can be asked to actually write the music for the film, although small adjustments may have to be made by both director and composer after the writing and before the recording. Even after the recording, there are possibilities for further accenting of the music by shifting shots during the sound cutting. The composer can be a great help with suggestions for the cutting and timing of visuals.

The writer of the commentary (not necessarily the author of the film) has to work this same period, and with much the same method. He had best keep his nose close to the Moviola, and derive his ideas as much from the film as from the script.



You eventually bring your finished film to the collaborator who has exerted a constant moral pressure upon every function of its making from the start—the audience. Our initial mistake, which we are well over by this time, was placing our documentary work in an avant-garde category of film-making, stressing tricks of direction, photography, cutting and presentation which introduced a note of studied technical brilliance which often threw our films out of tune with the audience. As soon as we recovered the social function of documentary, we recovered a healthy relation to our audience.

I believe that the documentary filmmaker has a great responsibility to his audience. The very absence of a fictional coating is almost enough cause for this great responsibility, but add to this that we are constantly touching unfamiliar social themes and concepts, and to influence people's opinions on these closer, but more unusual subjects is a considerable task. Today, those of us who are making documentary films (and that now includes an increasing number of directors, writers and cinematographers from the entertainment-film field) have the added responsibility of making our films and the message they convey play a dynamic part in the War Effort. But if our responsibilities are increased, so, too, are the possibilities our films can realize, and it is not, I hope, over-optimistic to predict that under this new impetus, we shall have the opportunity of proving—on a larger scale than we ever enjoyed before—our contention that the documentary film, intelligently handled, is capable of doing a truly great and constructive work for society. **END.**

## Boom For Miniatures

(Continued from Page 297)

mounts, while the boom-arm itself is raised, lowered or revolved manually, by a separate crew.

In addition, a series of levers overhead control electrical current fed through the supporting wires to the plane, not only to spin the miniature propeller, when necessary, but, operating through relays, to work any special effects that may be desired, such as smoke, fire, explosions, and dropping bombs, flares or parachutes.

These relays may be pre-set and operated by remote control from a single button, so that the director, with this button in his hand, can set off his effects himself, knowing that, say, the first trip, a machine-gun will fire, at the second, a bomb drop, at the third, smoke will appear, at the fourth, a fire will start, and at the fifth, the plane may explode and break up, and so on. As seven or eight relays are available, and may be pre-set in any desired sequence, an almost infinite number of possible combinations of effects is possible.

The boom may be used in many different ways. We have used it with a sta-

tionary camera, and with a camera mounted on a dolly or camera-car travelling beside the miniature plane. Where the boom itself is moved along a track, the duration of "flights" will be limited only by the dimensions of the set or backing used. Even when the boom itself is stationary, it is possible to obtain a surprising effect of straight flight by revolving the boom-arm and keeping the arc of the flight-path straightened out by rotating the two mounts at the end of the boom. And by combining the various movements possible with this device, almost any evolution is possible. We have made planes approach the camera, dive, circle, climb and then fly away again, and thread their way in and out of the smoke of miniature forest fires with remarkable realism.

The use of this boom is supplemented by a large, outdoor sky-backing which, while built especially to simplify the exposure problems of the Technicolor miniatures for "The Forest Rangers," seems certain to prove almost as useful as the boom itself in meeting the increasing need for miniature plane shots in the future. **END.**

## Slater

(Continued from Page 296)

very conspicuous pilot-light is dark. A manual switch is provided so that the slating lamps may be turned off if long periods elapse between one scene or set-up and the next.

The design for this slater was conceived by Warner Camera-Chief E. B. ("Mike") McGreal, and engineered by A. W. Tondreau of the studio's precision mechanical department. "In developing our slater," says McGreal, "we designed and actually constructed three other designs over the period of the last two years, not to mention some others which never progressed beyond the drawing stage, before we evolved a design which met the requirements we had set for ourselves.

"Briefly, we wanted a slater which would be as nearly automatic—call it foolproof, if you like—in operation as was possible. We felt that a scene-slater should, if possible, require no manual manipulations on the part of the camera-

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crew beyond those involved in operating the camera normally. We felt that the slater should be as nearly as possible self-contained within the camera: not only for its own protection from physical damage or misalignment with normal service handling, but also so that it would not in any way interfere with the normal manipulation of the camera on even the most intricate follow-shots.

"We also felt that the slater, to be really effective, should work independently of the camera's photographic optical system. There are several reasons for this. For one thing, if the slater is photographed through the camera-lens, its image will change in size according to the focal length of the lens in use: a dial that will give a normally large, legible slate with a standard 50mm. lens will produce a very small image—perhaps no bigger than a hand slate—when a wide-angle objective like a 24mm. is used, and conversely, when a long-focus lens is used, the image of the slate may be so enlarged that all the needed data may not appear on the frame.

"Moreover, slating through the lens has other disadvantages in that the diffusion, filtering and focal setting of the camera-lens will affect the legibility of the slate.

"As I have said, we experimented with a number of designs, and I think this final one meets our requirements very completely. With the exception of the small tablet which carries the dial, the entire device is contained within the camera. In use, aside from making sure the slater's light-source is switched on, as shown by the pilot-light (a necessary feature since in some instances an hour or more may elapse between scenes, and there is of course no need for keeping the slating lights burning throughout this period), the operation of the slater is so fully automatic that nothing is required which is not part of normal camera-operating practice. The slater automatically provides a sync-mark, and makes its record of scene-identification data on the film otherwise wasted in bringing the equipment up to speed. Since the slater is wholly independent of the camera optical system, it always provides a completely legible, full-frame slate, regardless of the diffusion, filtering or focal setting used for the scene, and there is no need for correcting focus or exposure between slating and starting the action of the take."

Tondreau points out that with the single exception that the slater's lights are not turned on by tapping the motor line (a practice the sound engineers deemed inadvisable as it might, under some circumstances, impair synchronization of the camera and recorder motor systems), the slater's operation is completely automatic. "All the thought the camera-crew has to give to this slater," he states, "is to keep the information on the data dials correct, and rack the camera into shooting position after, rather than before the motor is started. This latter is a pretty common practice, anyway, as most cameramen like to take

a last-minute look through the lens before shooting.

"Exposure for the slate portion of the scene is pre-set to a correct average value, and since the built-in resistor is variable, may be altered very easily to match the exposure values of interior or exterior scenes, or for different types of film, etc. We have worked out these settings so that under all normal conditions the slate portion of the negative will print correctly in the middle of the printing scale, on light 13, so that on any normal negative we can be assured that the slate, though printed for the density of the scene negative, will be fully legible. And if the cinematographer should change from the usual Plus-X to, say Super-XX for any special purpose, or Background-X for exteriors, the Assistant need only loosen a lock-screw and re-set the resistance to a predetermined calibration to keep his slate-exposure normal."

The new slaters are already in use on several of the studio's production cameras, and are being installed on all of them as rapidly as production schedules permit. **END.**

## British Technicians

(Continued from Page 295)

or sound-recorder than they ever could be as a rear-rank private.

The functions of these Service Film Units are: (1) production of training and instructional films for their respective services; (2) taking of films for record purposes; and (3) production of films for propaganda and distribution to the public. As regards this latter, some of the best newsreel stories and documentary films have been provided in this

way, as chronicled in *THE AMERICAN CINEMATOGRAPHER* during recent months by Capt. Harry Rignold, of the A.F.U., who filmed the Commandos' Norway raids, and Capt. Osmond Borradaile, of the same Service, who filmed "The Lion of Judah" during the liberation of Abyssinia, and has recently been invalided home with wounds received in the Middle East.

It should be mentioned, by the way, that in the British Army the A.K.S. has the job of making record and propaganda pictures. Where necessary, these units undertake studio productions, as well as the more routine all-exterior work.

The Army Film Unit have got together a number of battle cameramen whose duties are to be in the front line. In addition to the stories mentioned, these chaps have got some excellent stories in Libya and other regions.

In this work, as the combined War Effort of our United Nations extends around the globe, the cinematographers and other technicians serving in the Film Units of our Army, Navy and the R.A.F. will almost certainly find themselves serving shoulder to shoulder with members of similar units with America's Army, Navy, Marine Corps and Air Force. I am sure that many of these men are known to each other through their work on the screen, and it is to be hoped that these cinetechical reunions-in-arms in the far corners of the world may lay the foundations of a world-wide brotherhood of film technicians which will help us all to make better pictures, wherever we may do so, after the Victory is won! **END.**

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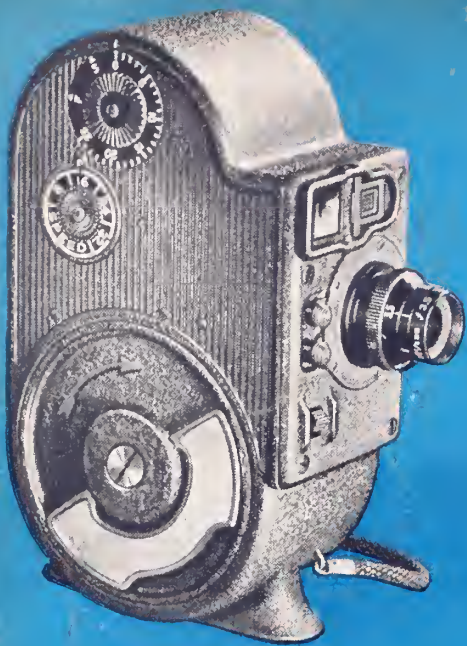
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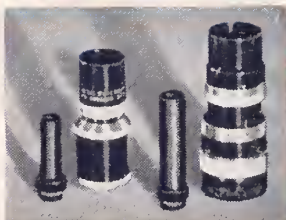


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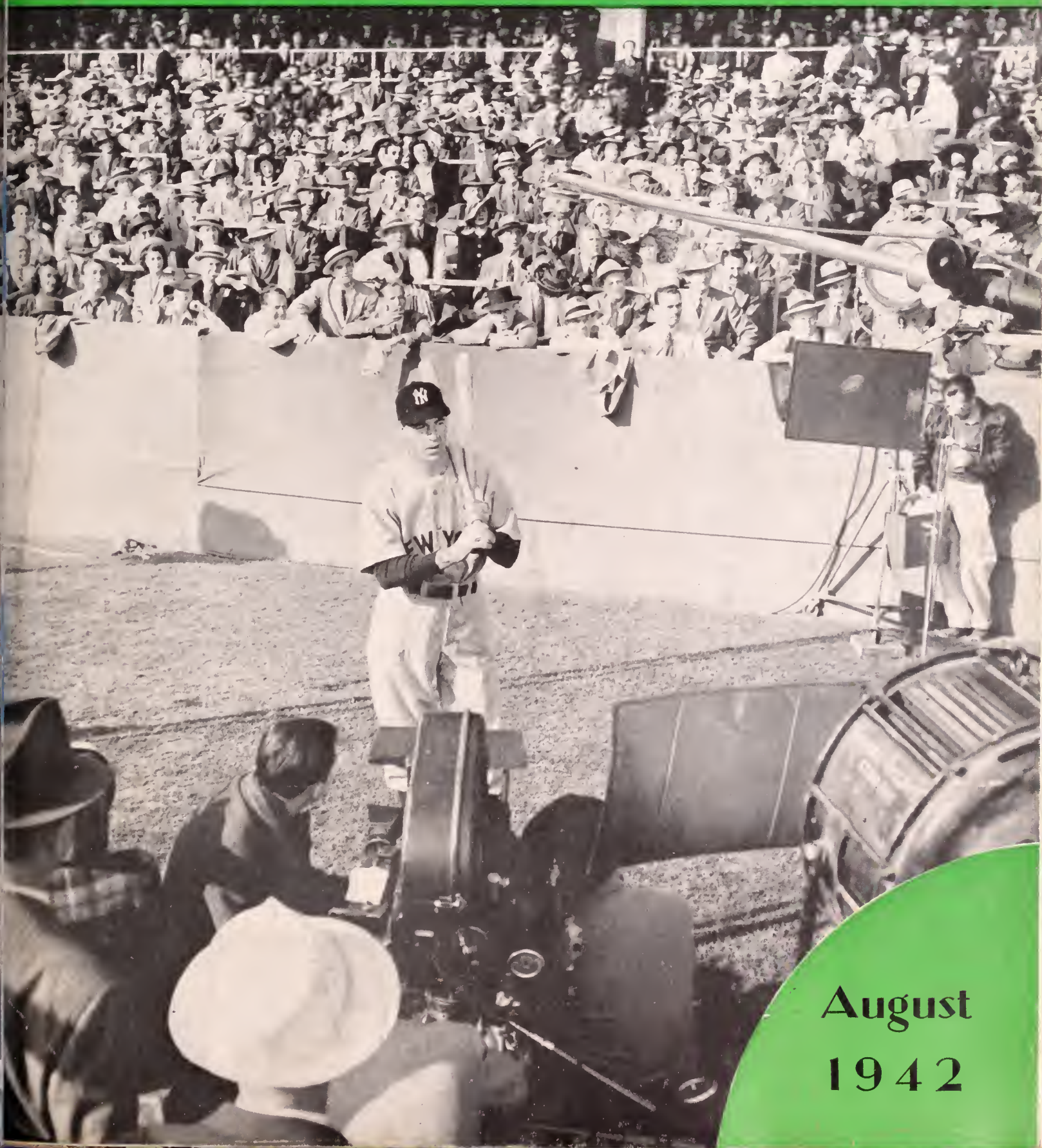


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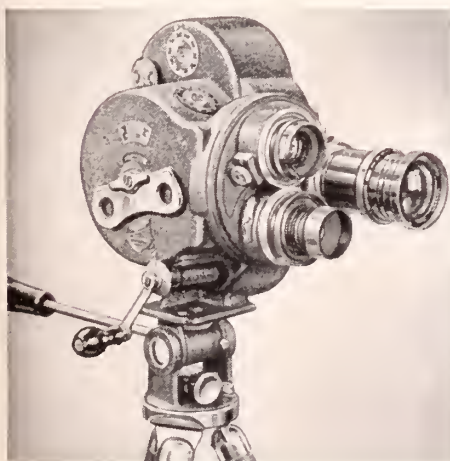


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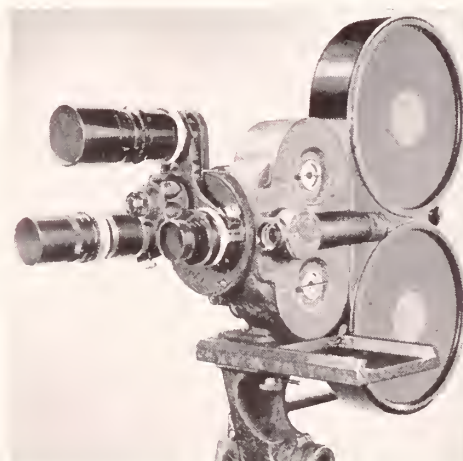


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# AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 23

AUGUST, 1942

NO. 8

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### The Front Cover

This month's cover shows Rudy Maté, A.S.C., filming a scene for Goldwyn's "Pride of the Yankees." Note shadow of overhead scrim which softens sunlight on Gary Cooper, and use of "booster" lights for front and back-lighting. Photo by Hal McAlpin.

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The best 16mm. camera and sound equipment can, like the 8-M camera shown here, be used almost exactly like 35mm. studio equipment.

motion picture practice begins to diverge from that of the manufacturer with his blueprint. For it is at this point that the variable factors which are peculiar to motion picture production come into play.

Suppose, for example, you start production with a script which, while still in the scenarists' typewriters, has been pared to the bone, so that instead of the 1,000 or 1,500 scenes we've all seen in scripts in the past, it contains but 450 or 500 scenes, which experience tells us ought to be about right for the average 8-reel feature. Assume, too, that you have a director, cast and technical crew so efficient that you can be confident of averaging but two or three takes per scene for the entire picture.

The average business-man or manufacturer, accustomed to figuring materials out on a blueprint basis, would say instantly that under such conditions, you ought to be able to bring the pic-

## "PRE-PHOTOGRAPHING" IN 16MM. AS A MEANS OF CONSERVING FILM

By LEE GARMES, A.S.C.

**W**HEN you build an automobile, a tank or an airplane, there is no difficulty in determining how much material will be needed, or how and where material can be saved in producing it. You need only look at the blueprints, and all that information is at your fingertips in mathematical black-and-white.

Now that wartime necessity has focused our attention on the need for conserving film and many of the other materials that go into the production of motion pictures, many of us have felt that some similarly accurate method of making a precise pre-production blueprint of a motion picture would be invaluable in our efforts to conserve film and materials. With such a blueprint, we ought to be able to stop most of the industry's film wastage *before it happens*. Without it, we can simply skim the surface of the subject, getting off, so to speak, the top layer of waste, but leaving most of it undisturbed because we can't put our finger on it until it makes itself visibly evident—after which, of course, it's too late to remedy.

Such an approach is rather like a

doctor who attempts to cure the symptoms of a disease rather than the cause. For example, it is very obvious that almost all of our film wastage is traceable to over-shooting, some of which can in turn be blamed upon over-written scripts, but much more of which is caused by the fact that we habitually—in many cases, necessarily—expose considerably more negative in filming a picture than can possibly be compressed into the picture's final release footage.

During the last six or eight weeks, we have begun to find out that it is not too hard to cure some of these surface symptoms. For example, it is not too difficult to put into effect a policy whereby scripts must be written with only the approximate number of scenes which can be contained within the production's scheduled release length. Neither is it so difficult to agree that except in instances where the contrary is absolutely unavoidable, action should be so thoroughly planned and rehearsed that it can be filmed within an average of, say, three takes per scene.

But when you get things streamlined to this point, you reach the point where

ture in with an expenditure of about three times the footage of its release-cut negative—say 25,000 or even 30,000 feet, to be on the safe side. But anyone experienced in motion picture production would say that you'd be doing uncommonly well if you get the picture completed with only 60,000 feet of negative exposed, and that many major studios and directors would consider they'd achieved something remarkable if they did it with 100,000 or 150,000 feet of negative shot—exclusive of retakes and added scenes!

Unfortunately, that "perfect" script isn't a real blueprint of the picture, in the manufacturer's meaning of the term. It details the dialog and at least outlines the action, while the sketches of the art-director and production designer complement it by suggesting something of the visual appearance and flow of the scenes and sequences. But none of them can blueprint how a scene will "play," or how scenes and sequences will cut together.

Two different actors playing the same scene will very probably give the identical script action entirely different tim-





Portable sound projectors like this one permit studying the 16mm. "blueprint" scenes on the set.

ing and "business." One may require twice as much film as the other. Inexperienced actors will "muff" more takes than experienced ones. In the same way, two different directors might give the same sequence entirely different treatment: one might play almost the entire sequence in short cuts and simple set-ups, while the other might use longer scenes, with extensive use of footage-consuming camera-movement and follow-shots. One might virtually cut the sequence in the camera, while another might shoot each cut with generous overlaps, and include, as well, a very generous assortment of ad-libbed business and added angles to give the cutter an abundance of material with which to work.

In each case, an entirely different amount of film would be required. On one extreme, you might finish shooting with a picture which required little more than cutting out the slates to get it to its release footage. On the other extreme, you might emerge with a picture which, disregarding the excess footage shot for protection and cutting purposes, would still require the elimination of 10,000 or 20,000 feet between the first cut and the final release-cut version. And of course as regards entertainment quality, the amount of negative exposed or conserved in producing the picture need have no bearing on the film's intrinsic merits.

But—suppose that before a picture went into actual production, everyone concerned, including the producer, the director, the players, cinematographer, writers and film-editor had had a chance to make and analyze a working blueprint of that picture? Not a mere written or sketched outline, but an actual working model of the picture, in the motion picture medium, so that they could study every detail of the picture beforehand, in terms of actual footage, cuts, angles, timing and business. They could tell in advance precisely what scenes were necessary to tell the story to best advantage, and exactly how they would cut together. They could predetermine with almost 100% accuracy just how much footage to allow for the picture as a whole, and for every given action. Each scene could be shot right

to the desired frame, with no overlaps and almost perfect efficiency. There should be no retakes, for the picture as shot would fit together precisely as indicated by the blueprint!

This sounds like an absurdly impossible ideal—but it is thoroughly practical. The means and methods are already at hand, if we want to use them.

For several years, a number of our studios have been making extensive use of 16mm. as a means of making tests quickly and economically. My suggestion is that we simply extend this idea to its logical conclusion, and instead of confining ourselves to the making of individual tests in 16mm., "pre-photograph" the entire production in 16mm., to provide that needed blueprint!

It could be done with existing equipment, very easily, quickly and economically, and it would show the way to immensely worthwhile savings of film and other critical materials, to say nothing of effort. Making a test-production like this would require the services of the director, cast and technical staff for a few days in addition to the film's normal production schedule, together with the expenditure of perhaps four or five thousand feet of 16mm. film. But it would result in saving from 50 to 90% of the 35mm. film that would otherwise be used in making the picture, and it would in all probability shorten the 35mm. production's shooting schedule appreciably, since everyone concerned would have the advantage not only of having done each scene and sequence previously, but of working almost literally from a blueprint, since they could use the 16mm. scene as a direct guide

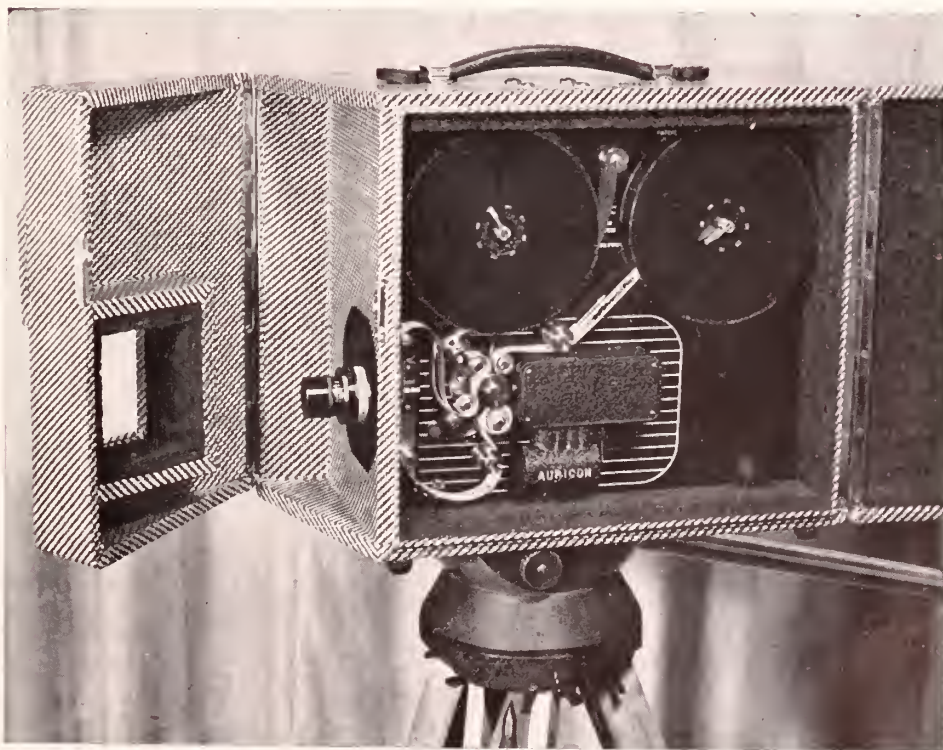
while filming the corresponding 35mm. ones.

I see no reason why the 16mm. "pre-production" should be made with any particular attempt at making it a perfectly finished production. Camera-angles, directorial treatment and action should of course be treated with painstaking accuracy, as should timing and tempo. But photographically, for example, the 16mm. version should be of almost elemental simplicity. Dramatically important photographic effects (like the silhouetted murder-scene from "Algiers") might be sketched in roughly, but in general the lighting and photographic treatment should be kept routine, in the interests of speed. The perfecting polish (not to mention the glamorizing personal lightings) could come in the final version.

It would seem logical to shoot these test-scenes, wherever possible, using the actual sets erected for the production itself, certainly, at least, in the case of key sets. Less important sequences, and particularly those where there might be any reasonable question as to whether or not that action could not be satisfactorily telescoped into other sets or scenes, might as well be filmed on standing sets of the general type required for that action. If after this try-out it was found that the set or action could be eliminated, it could be done *before* the set was constructed, rather than afterward.

These test-productions could be shot in sound, and probably should be, to reap the fullest advantage from the idea. Excellent direct-16mm. recording equipment is available in both double-system and single-system types. Some

(Continued on Page 382)



Single-system 16mm. sound-cameras like this "Auricon" are stripped to minimum essentials yet give picture and sound quality that is more than adequate for "pre-photographing" a 35mm. production.





# Animated Cartoon Production Today

## Part V—Painting, Photographing, and Re-Recording

By CARL FALLBERG

**T**HE home stretch has finally been reached when the cleaned-up animation drawings receive an "Okay for Inkers" from the director in sweat-box. From here on in, it's no-stops until the final Technicolor print is made. The tortuous path to that final okay has already been described—the multiple processes, the complicated steps, the vast amount of overlapping work necessary by many people to transform an idea into working animation drawings. It has been pointed out that a state of flexibility as regards changes exists during all of these processes, but when animation is "Okay for Inkers" the seal of approval has been put on it. The animation represents the best of the animator's ability to portray a story idea. The idea at last is ready to receive its final polish and be dressed up into color and form.

The period now arrives when all of the final elements that make the cartoon live on the screen are prepared, mixed and blended together into an amalgam of color, sound, movement and music. Of course, all of these elements aren't suddenly dumped into the picture at once, but are completed and added each in its turn. First, the animation drawings are traced onto celluloid, then painted and photographed over the finished backgrounds. Music, meanwhile, has been composed and recorded; final sound reels

are assembled, and re-recorded into one sound-track which is added to the picture at the time the Technicolor release prints are made.

But since animation is the key process about which all other activity in the studio centers, the further progress of the animation drawings will be taken into consideration first.

After being given their okay, the drawings are shipped off to the Inking Dept., getting a final checkup en route to make sure that the mechanics of the scene are correct—drawings in the proper order, numbered correctly, camera and pan moves accurate, etc. Every component of the scene must be correct down to the last frame.

Inking literally implies tracing the animation drawings onto celluloid with india ink. However, it is more than simply tracing. It is really a re-drawing of the character. The inker must transpose the animation drawing onto celluloid, retaining as much of the freedom, construction and spontaneity of the original as possible. This calls for much more skill than just the ability to trace. It's no cinch to swing a smooth, even pen

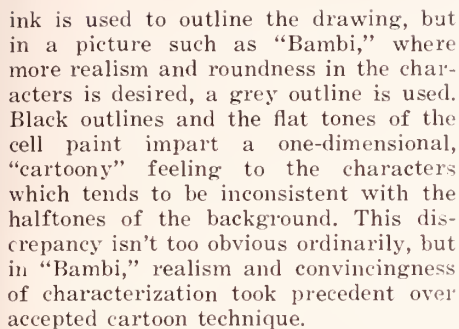
line across a slick "cell" and accurately follow the outlines of the pencil drawing. A deviation of only the thickness of a pen line might be enough to destroy the feeling or construction of the drawing. An examination of the inked cells illustrating this article will indicate to what extent a good inker is able to retain the feeling and expression of the original animation drawing.

As a matter of technical interest, the cells are of the acetate, non-inflammable variety and about 5/1000 of an inch thick. Ordinary black india-ink, with an element added to make it adhere to the cell, is used and is applied with a Gil-lott's No. 290 or 303 pen. The pressure of war is strongly felt in the cartoon industry, since celluloid is high on the priority list. Cells, rarely used more than once because of vulnerability to scratches, are now put into service two, or even three times. Various chemicals that go into the composition of cell paints have been made unobtainable by priorities, so the paint laboratory is busy developing substitutes.

All inking is done on the front side of the cells, the paint being applied on the back. The inkers work on boards fitted with registering pegs that fit the punch holes in the cells and animation drawings. For the average cartoon, black

Above: a cartooned lightning-flash. The left-hand picture, with rain animating in front of it, is used for most of the scene, and the lightning effect produced by substituting the right-hand picture for a few frames.





The inker has to keep a careful eye on technical instructions regarding trace-backs, held cells, and registering of characters to the background. A "Color Model" (illustrated) is provided, defining the types of inks and paints to be used. When completely inked, the cells are sent to the Painting Dept. for coloring.

The paints are applied in flat tones, on the backs of the cells, within the areas as indicated by the inked outlines. This process, while not quite as exacting as inking, requires a sureness and steadiness of hand, besides the all-important patience. Each painter usually handles all of the colors that are to go onto the cell—numbering anywhere from six to several dozen.

The paint laboratory, where the mixing of the colors takes place, maintains a "library" of about 113 separate hues, with seven values, ranging from dark to very light, for each hue, giving a total of more than 800 colors to work with. And a feature cartoon might well use every one of those tints.

The paints themselves are specially mixed at the studio, from formulas developed by trained chemists in a complete laboratory maintained for just that purpose. The pigments are obtained from many sources—animal, vegetable and mineral. One type of black, for example, is obtained from the residue of burnt bones.

The paints dry on the cells in about twenty minutes, but are by no means permanent. They eventually dry out and chip off the cell. In order to slow down the drying-out, a relatively high humidity is maintained in the air of the painting and camera departments. The paint laboratory is constantly at work on the problem of developing paints that will resist drying and chipping. However, permanence of either paint or cell beyond a certain point is hardly possible, as the

Left, "color model" that guides the cell-painters. Right: evolution of a scene from "Bambi" from animator's rough extreme through clean-up drawing, inked cell, and painted cell, to the final scene with finished cell in place over the background.

celluloid itself dries out and cracks in time. After the cells have been painted, some of them may be side-tracked to special artists for shadows or special effects. Shadows are painted with a transparent paint, and the air-brush is used for dust, certain types of highlighting, etc. For speed effects, where forms are streaked or blurred, the paints are dry-brushed on. At times, a dry-brush tone is used to help give roundness to a form.

Transparent shadow paint is only practical for small areas. If the shadows are large, they are generally double-exposed onto the scene. In this case, the shadows are animated separately, painted in flat black tones, and after the scene has been shot once with the regular cell setups, the film is wound back and the shadows "d.x.d" on at perhaps thirty percent exposure. This method gives a natural transparency to the shadows that cannot be obtained by paint.

The problem of working out practical color-schemes for the characters is tackled by the layout-man and color-model department. Many considerations enter into choosing a color pattern for a character. The patterns must be fairly simple, so as to be easily animated. Complicated patterns involve a lot of extra work and expense. Inharmonious patterns are avoided as are colors that would be out of key with the background. Bright, uncompromising colors are hard to look at, and so, in general, the tendency is to use subtler, pastel shades in the coloring of characters.

These color-schemes are carefully planned. For example, the color scheme of a "sunlight Bambi" is considerably lighter than that used when the character is supposed to be in shadow. Also, Bambi as a new-born fawn is lighter in hue than at maturity. In winter, he is handled in dull gray tones, in spring, in warm browns.

When painting is completed, the checking department again takes a final look at the technical correctness of the scene's mechanics, and if all passes muster, the cells and finished background are sent to the cameras to be shot.

The shooting of a cartoon is the most mechanical procedure in the entire production process, and it is one of the most exacting. The instructions on the exposure sheet must be followed down to the last frame. It isn't a matter of simply sticking the cells under the camera and pushing a button to expose the film. Pan moves, tabulated to accuracies of 1/64 of an inch must be made. The camera itself also might be called upon to move towards or away from the set-ups, or around within the 5 or 6½ field limits. Pan moves and trucks often require the services of two or three men







Three frames of Technicolor cartoon negative: Top: blue-filtered frame; center: red-filtered frame; bottom: green-filtered frame.

besides the regular camera-operator.

The cell and background set-ups are shot flat, the camera mounted on a movable crane directly above. On each side are two banks of incandescent lights, adjustable to varying degrees of intensity. The cells are held in register over the background by a set of pegs exactly like those on the animators board. At the moment of shooting, a glass platen is lowered on the entire set-up and held tightly against the cells by air-pressure to prevent any wrinkling or buckling.

Cartoons are shot with a black-and-white camera, fitted with a revolving filter for the three color values, on a single negative by the successive-frame method. Each set-up is automatically exposed upon three separate frames of film, each frame registering one of the primary colors of the Technicolor process. Synchronized to the shutter shaft of the camera is a revolving filter fitted with three filters—a blue filter which registers the yellow-printing values, a red filter for the cyan (blue) printing values, and a green filter for the ma-

genta-printing values. The three frames are exposed in that order by the camera operator pressing the button once.

This successive-frame method has a decided advantage over the regular three-negative system as used in live-action Technicolor in that it simplifies camera operation and processing because only a single negative is used. Any ordinary black-and-white camera can be converted for Technicolor simply by adding the filter-wheel. Of course, the successive-frame system obviously wouldn't work for live-action, but it is ideal for animated cartoon use.

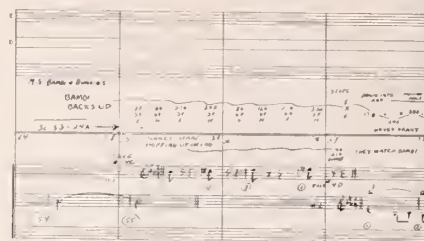
When completely shot, the scenes are again checked in the form of "color dailies"—similar to live-action "rushes." These dailies are the first color prints that are returned by Technicolor, and are without sound. The layout-man, color coordinators and camera department representatives view these dailies and check them for technical correctness and color balance. If okay, they are cut into their proper places in the test reel in place of the black-and-white animation tests.

Meanwhile, other departments are busy organizing the elements of sound and music that are to be added to the picture. The musician has already spent long hours composing a score, and longer hours arranging it. The timing of his musical sections is carefully checked against the final footage of the picture. As was mentioned in an earlier installment, cartoon music is of two definite types. One, of a pre-established timing and pattern, to which animation is fitted, and the other, in which music is written to fit the action. The former presents no problem to the musician. He can give free reign to his musical imagination, and it's up to the story man and animator to compromise to his harmonies. But on the other end of the line it's a different story. With story, animation and timing already set and unalterable, the musician must not only design his melodies to the feeling of the story, but also to adhere rigidly to the timing of the action.

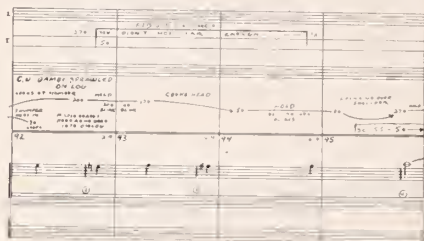
The musician will try to get a consistent overall tempo set for the picture before it goes into animation, and if he's lucky, it remains as such all the way through production, thus simplifying—comparatively—his composing, and later, recording, problems. But if he's not lucky, if the timing gets kicked around, a few frames added here, or a few taken out somewhere else in the interests of the animation, the final tempo of the picture is liable to vary considerably from sequence to sequence. This presents no unsurmountable creative hurdle, but it makes for finer musical feeling in a picture if a fairly consistent tempo can be maintained.

The musician works on a score on which is indicated the exact footages of all the scenes, the positions of dialog and sound-effects, and pertinent information relating to the action. He might have the picture reel on a Moviola alongside his piano to refer to. Then, with

BAMBI — REEL 10



BAMBI — REEL 10



Musician's score sheet for the scene from "Bambi," the animation of which was illustrated in the May and June installments of this series.

the intent and purpose of each scene in mind, he begins sketching in the music on the score sheets, working back and forth between piano and pencil as he tries out chords, runs and harmonies, struggling just as hard to get a proper feeling of suspense in a certain passage or a fresher slant on a springtime theme, as a story-man or animator does to perfect the pictured action that goes with it.

When all of these basic melodies and harmonies are sketched in, an arranger goes to work and breaks down the music for orchestration, scoring parts for the various instruments. The orchestration is then divided off into "takes" of various lengths ranging from a few feet upwards to a hundred, depending upon the phrasing of the music itself. Recording the music in short sections at a time makes the job of rehearsing and recording much easier all around. These various takes can be easily cut into sync with the picture reel according to their respective measure numbers.

For the recording of music to a definite, unchanging rhythm, each musician

(Continued on Page 380)





Left close-up of welding from one of Raphael Wolff's films; right, making a close-up of welding operation. Note shield on camera and high-powered spotlights employed. Below: frame enlargements from Emerson Yorke's films on shop training. Upper frame shows use of stroboscopic lighting synchronized to motion of drill and camera; lower frames show use of transparent lucite to show action of tap inside metal.

## MAKE 16MM BUSINESS MOVIES THAT HELP THE WAR EFFORT!

By W. G. CAMPBELL BOSCO

**I**N LOOKING over the 16mm. commercial-film field after nine months of active participation by this country in the war, it is possible to see a bright side to what might appear at first to be an exceedingly gloomy picture. Granting of course that the cinematographers, directors and writers who have been active in this field approach these new-day problems with the technical and creative ingenuity the situation demands, one can even become downright optimistic in evaluating the future prospects of the business-film industry as a whole.

Of course we must face the fact that the conventional business film as we have known it—sales films aimed directly at the buying public, and sales-training films calculated to instruct salesmen in the best selling methods—is dead “for duration.” And even though some business-film units have been kept reasonably busy during recent months making institutional films, the number of these productions must surely decrease in proportion as the national effort mobilizes more completely for total war.

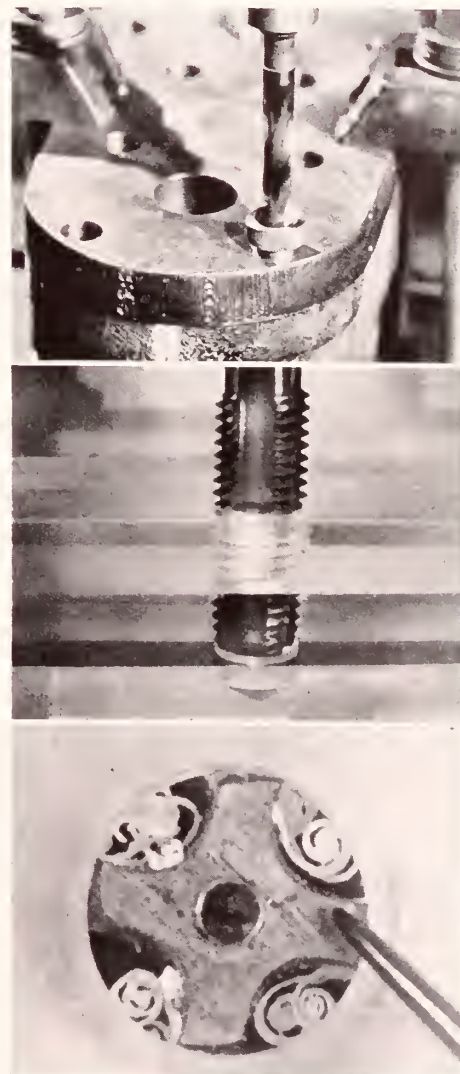
But for a number of years, those of us who have been active in building direct-16mm. from a toy to a business institution have insisted very loudly that a properly-made 16mm. business-film is the most potent way of conveying a message—and that it does not matter greatly what that message is. We've rather proven it by the impartial way 16mm. business-films have publicized almost everything from automobiles to safety-pins, and from dairies to cemeteries. We've also been rather insistent that 16mm. had the great advantage that its proponents had a new slant on things, and did not have to un-learn a

lot of traditions inherited from a 35mm. theatrical-film past.

Today, we have an opportunity to prove these contentions! If the first is true, what does it matter whether our “message” deals with the competitive merits of a particular brand of motor-cars—or with the “how-to-do-it” facts vital to employees in some defense industry? If the second contention is true, and we *do* have a new slant on things, we can prove it by giving new life to instructional movies. We can find new ways—both technical and presentational—of making things clear to the people who see the picture.

That this can be done is already being proven by progressive business-film producers and technicians in several parts of the country. In Hollywood, Raphael G. Wolff recently produced a motion picture on arc welding which not only presents its subject very clearly, but sets a new standard of technical and creative presentation for subjects of this nature. First of all, Wolff—a distinguished specialist in the making of color stills for advertising purposes—utilized Kodachrome for making a film of a subject which might ordinarily be expected to be one for which black-and-white would be quite adequate—and more convenient.

The simple addition of color to this picture very definitely made it of greater instructional value. A black-and-white shot of arc welding makes very little distinction between the incandescent spot of the arc and the little pool of molten metal which forms the weld itself, or between the dark tone of the metal being welded and the ridge of slag which protects the cooling weld. In color, these technically important distinctions stand out with unmistakable clarity. There is



no mistaking the extent of the arc-flame, and no confusing it with the cherry-red tones of the molten pool. The slag of the weld stands clearly apart from the welded metal.

New technical methods had to be worked out to make it possible to photograph this difficult subject successfully, without showing halation, and without sacrificing the balance of the picture to the incandescent spark of the arc. In the same way, completely professional animation—also in color—was called upon to show details which could not be shown by direct photography, such as the melting of the weld metal inside the electrode and the protective

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# Controlling Color In Lighting 16MM. Kodachrome For Professional Pictures

By JAMES A. LARSEN, JR.

**P**RODUCTION of professional motion pictures in Kodachrome, either for direct-16mm. commercial or educational use, or for enlargement to 35mm. color for theatrical release, involves a number of factors which are not encountered in black-and-white production (in either 16mm. or 35mm.) and which are by no means paralleled by the problems met in making 35mm. theatrical films in Technicolor.

The first and most basic of these is the necessity for realizing that 16mm. Kodachrome is a distinct medium in itself: basically different from 35mm. black-and-white or even 35mm. color, but capable of equally serious use if approached in a seriously professional manner. Speaking generally, the majority of professional producers and technicians base their concepts of motion picture production upon their experience in 35mm. black-and-white, and as regards color, with 35mm. Technicolor. Many of them, unfortunately, are inclined to approach the use of 16mm. with the attitude that since both 16mm. and Kodachrome were introduced primarily for amateur use, and give adequate results in the hands of even comparatively inexperienced amateurs, they, as experienced professionals, can take 16mm. in their stride. They fail to recognize the fact that to get consistently professional results with 16mm. and Kodachrome, they must handle it in a consistently professional manner. They should study the new medium at least as carefully as though the Kodachrome film were of 35mm. width and running through their Mitchell cameras, and adapt their techniques to the requirements of the medium in the same careful way they would if it were a new and unfamiliar 35mm. process.

The problems of exposing and lighting 16mm. black-and-white are not too unlike those of exposing and lighting 35mm. black-and-white, allowing of course for the differences between the emulsions and processing methods involved. But in Kodachrome, these problems are considerably different, and more complex. The Kodachrome emulsion has much narrower latitude than does any black-and-white emulsion, and the laboratory processing affords considerably less control than is possible in black-and-white or in 35mm. color.

One of the biggest points of difference between Kodachrome and black-and-white is the necessarily much lower sensitivity or speed of the Kodachrome emulsion, which means that under all conditions, much more light is required to give a satisfactory exposure in Kodachrome than in black-and-white. This is of course true of any color process; theatrical technicians are already familiar with this aspect of Technicolor, and I believe that some of the Holly-



Color-balancing artificial light and daylight is often a problem in Kodachrome location-work.

wood studios which have made use of 16mm. Kodachrome for pre-production tests have found that in practice the speed of the "Type A" used for interior photography is approximately on a par with that of the three-strip Technicolor process. However, lighting Kodachrome is a very different thing from lighting Technicolor.

In any color process, not only are the direction and intensity of the lighting important, but also the color of the light. Lack of recognition of this fact probably accounts for most of the unsatisfactory results which Kodachrome has given in the hands of studio professionals and 16mm. commercial cameramen, to say nothing of amateurs.

In any system of natural-color photography, the pictured rendition of colors will inevitably be influenced not only by the actual colors themselves, but by the color of the light falling on them. What we term a true rendition of colors means necessarily an exact reproduction of their visual appearance under what

we consider normally colorless light—i.e., normal daylight, which is theoretically defined as a blending of light-rays of all the spectral colors, so blended that we are not conscious of any color in it.

As a matter of actual fact, however, the proportion of light of different colors which reaches the earth from the sun varies throughout the day. The radiation of the sun itself is uniform, but the light which actually reaches us has to pass first through the earth's atmosphere, which acts like an enormous filter. The density and coloring of this filter vary according to weather conditions, and according to the angle at which the sun's rays strike it. Air full of moisture and dust (whether visible or not) has more of a filtering effect than dry, clean air. Similarly, the rays of the sun which reach the earth through a great thickness of this blanket of atmosphere—as is the case in early morn-

ing and late afternoon, when the sunlight strikes at a slanting angle—are filtered much more than the rays which reach the earth in the middle of the day. When the sun is relatively high in the sky, virtually the whole spectrum passes through; but when the sun is near the horizon, the rays pass through a much longer path of atmosphere, which holds back much of the blue and green light, and passes the yellow, orange and red rays strongly. An excess of dust or moisture in the air accentuates this.

Despite this minute-to-minute variation in the color of the light reaching the earth, there is usually a period of several hours during the middle of the day when the coloring of sunlight is essentially constant and "normal." The color-sensitivity and filtering of the Technicolor process has been balanced to this normal standard of illumination. So, too, has that of the regular or "daylight" Kodachrome film used for exterior shooting. Exposed to light of, or reasonably close to this "normal" color quality, the film will give proper color reproduction.

But if "daylight" Kodachrome is exposed to light of any other color-quality, it will not give absolutely accurate color reproduction. The degree of inaccuracy depends, of course, on the degree the coloring of the light varies from the midday "normal." It is for this reason that the Eastman Kodak Co. warns users of Kodachrome not to expose it within two or three hours after sunrise, or two or three hours before sunset.

But in commercial production it may sometimes be necessary to shoot during these off-color periods, even though normal color-rendition is demanded in the final film. In such instances, it is possible to use color-correcting filters, such



as are made by Eastman for use with their Color Temperature Meter, and by Harrison and Harrison for use with their Color-Meter. Essentially, these meters tell the cinematographer which of a matched set of color-correcting filters should be used to compensate for light of an abnormal color.

Because quite a bit of skill and a good deal of practice are required to use these meters successfully, I would recommend them only to the more painstaking professionals and to the seriously advanced amateur.

Daylight Kodachrome is balanced primarily for photographing subjects in full sunlight. If the subject is in the shade, and lighted by a clear, blue sky (but no direct sunlight) the resulting picture is likely to have a definitely bluish cast. The same thing happens when the sky is hazy. On a day so overcast that no direct sunlight gets through, the color quality of the light may sometimes be bluish, and sometimes a definite reddish, depending on the conditions of the overcast, and these tones—even though invisible to the eye—will be recorded in the Kodachrome scene. In looking at an actual scene under such conditions, our minds subconsciously compensate for these slight differences in color-quality; we fool ourselves into seeing the objects in what we know to be their normal color. The color film does not have this automatic mental compensation, so it records the colors of the scene as they actually are.

For perfectly accurate color reproduction in Kodachrome, the subject should be in full sunlight and should be photographed at times and under weather-conditions when the sun has essentially constant color characteristics. For shooting close-ups in sunlight, some means of softening the shadows should certainly be used, and if possible, some means of softening the direct sunlight without changing its color, as well. If reflectors are used, the color-temperature or quality of the reflecting surface should be carefully chosen so that it does not upset the normal color balance of the lighting. The reflector should reflect all colors as nearly equally as possible. White is the only color which does this. The familiar silver-surfaced reflectors so often used professionally tend to reflect a disproportionately strong portion of blue light, while the gold foil reflectors so often used by professionals in black-and-white should certainly never be used in Kodachrome because they give the picture as strongly yellowish cast as though the scene had been photographed through a deep yellow filter.

Professional units which can take their own portable generators on location with them can simplify this outdoor light-balancing problem by the same method used in Technicolor: employing color-corrected arcs of the same type used in Technicolor lighting as booster lights.

Color-reflection from surrounding objects is another source of trouble in



Compensation must often be made for the changing color-temperature of natural light when professionally accurate color reproduction is desired.

making color exteriors by any process. If the subject is positioned near a large colored reflecting surface, such as the wall of a building, the whole scene may take on a tint of the same color as that of the reflecting surface. Unless such effects are purposely desired for an emotional or story reason, they should be avoided by more careful placement of the subject.

The foregoing may be summarized briefly into three simple rules. 1, If you want the best color reproduction possible from daylight Kodachrome, shoot only when the subject is in the sun and the day is clear. 2, Do not attempt to shoot too early in the morning, or too late in the afternoon. 3, Light the subject flatly, using diffusers, reflectors or booster lamps which do not introduce any light not matched to the daylight standard.

Important as the color quality of lighting is in Kodachrome production, it is no more important or critical than the quantity required to produce a correct exposure, for this, too, influences color reproduction. Assuming that the exact exposure for correct color reproduction has been determined, an increase or decrease of only 50% in the quantity of light reaching the film will upset the true color reproduction to a noticeable degree. An error of 100% will destroy the color balance to the extent that the scene will not be acceptable in professional production. A mild underexposure will increase the color-saturation of the image, making the colors exaggeratedly bright. A greater underexposure will badly accentuate the colors at the red end of the spectrum. A mild overexposure will soften the colors, rendering all colors more as pastel shades. A bad overexposure will "wash out" most colors, and usually somewhat accentuate the blue end of the spectrum.

The primary interest of the professional cinematographer is naturally to

expose his Kodachrome original in such a way that he will get a faithful reproduction of color in the duplicates made as release-prints from that original rather than in the original itself. Speaking generally, this means a correct exposure, just sufficiently on the full side to aid in softening the increases in contrast and color-saturation which are inevitable in most duping processes.

With an emulsion of such limited latitude as Kodachrome, the determination of correct exposure should certainly be entrusted to a dependable photoelectric exposure-meter which measures *all* the light falling on the subject. While the author has used reflection-type exposure-meters as made by both Weston and General Electric for years, and with uniformly good results, his most recent experience has given definite proof that for professional production in Kodachrome by far the best exposure-meter now available is the Norwood which, outdoors as well as under artificial lighting, makes a reading of incident rather than reflected light and employs a hemispherical collector over the photocell so that it accurately evaluates *all* the light reaching the subject, making due allowance as well for the angle at which the light strikes the subject.

Interior lighting in professional 16mm. Kodachrome is entirely different from professional lighting practice for either 35mm. black-and-white or Technicolor. The color-temperature of the lighting is even more important in Kodachrome interiors than it is in exteriors, for a special type of Kodachrome is used. Known as "Type A," this emulsion is color-balanced to incandescent lighting of a specific color-temperature. It will give absolutely unusable results if used with either the lighting used for professional black-and-white, or that used for Technicolor.

The most important single factor in-

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# The Indians Had A Word For Us

By EDUARD BUCKMAN

In technical dependence upon Douglas Sinclair, co-directing cinematographer.

**"M**USSON-AB-SKI-GA-GOG" was the word the Cree Indians had for us at the time. And we were assured, once we'd left the James Bay area, they'd change it to "Kam-musson-ab-ski-gay," and would thereafter use that imposing Cree mouthful whenever they referred to us. But we weren't worrying about either what they did or would call us. Our worries were much closer to our daily life and work. Naturally the Indian title reflected these. We, the "musson-ab-ski-ga-gog," *those who take pictures*, were faced with so many problems that we wondered if, when we did get back to civilization, we mightn't have nicely qualified for the "Kam-musson-ab-ski-gay" title, which translates: *those who have taken pictures!*

Almost as soon as we reached the North we had some of our most anxious moments—our first and major trial.

The camera was running in a cooking pan and made a swishing sound with a metallic echo. The light in the room was coldly pale, as if it reflected the muted gurglings of the Cine-Special. The light was pale because it came through an inch of hoar frost on the window-panes. The room was *cold*. The cameraman wore his dressing-gown over his clothes as he bent attentively above the pan, watching the clear liquid turn dark as the oil worked out of the camera.

"It's just about right now," he commented, much as if the pan contained a cake which had reached baking perfection.

"I hope so," I answered. "I don't relish the idea of freezing up here and then having nothing to show for it when we get back to civilization."

"Coal-oil is the only thing," the cameraman was saying solemnly, as if I hadn't heard the process explained before. "Just let your camera run in it—with the lenses off, of course. Just let it run until every drop of oil is washed out. Then no temperature will slow it up. You saw how the Eyemo behaved, and I'd treated it with the coal-oil before we got up here. I'll do the same for the Cine-Special now, though I don't much like to—it's a complicated piece of machinery. But what else can I do?"

"It wasn't working anyway. You can't make it any worse than that, no matter what you do or don't do to it."

"It's done now," the cameraman said. He lifted the camera from the pan and began to dry it with Kleenex.

The coal-oil bath was a direct outcome of the experience we were obtaining in making moving pictures under Arctic conditions. True, we weren't actually in the Arctic Circle—not by almost a thousand miles—but we might as well have been. Temperatures of thirty, forty and fifty-odd below zero are rarely bettered (or lowered) in the Arctic itself. We were working at Moose Factory, second oldest Hudson's Bay Company Post on the continent, two miles across the Moose River from Ontario's northernmost rail-head at Moosonee, and some ten miles up the river from James Bay. The assignment, given us late in November 1941 by

John Grierson, Dominion Film Commissioner, for the National Film Board of Canada, was to make a film in 16mm. Kodachrome on trapping in the North. And in the process the cameraman was to take a number of stock-shots of Northern activities in general on 35mm. film, with an Eyemo.

We chose Moose Factory as the most likely fur country closest to our Ottawa Studio base. As far as location went, we chose well; but we went North quite unprepared for the difficulties of filming under sub-zero conditions. Everyone in Ottawa who had worked under Arctic conditions had given us advice; and we'd read what there was in the American Cinematographer Handbook. But it took the country itself to really teach us.

First, we'll pass on a non-technical maxim which should save a lot of technical misfortunes to him who will heed it: *You can control your camera and film, to a large extent, when they're in your hands; but when they're out of them they go to the dogs.*

Dog-team, of course, is the usual means of winter travel in the North. Dogs are not kind to cameras. They'll gnaw the leather cases, if they get the chance, when the cameras are not on the sleigh. And when the cameras are lashed with the sleigh's load under the tarpaulin cover, the dogs can do far worse!

We didn't risk our three 16mm. cameras on our maiden dog-team voyage. I use the phrase advisedly. When we reached Moosonee there was an unexpected thaw in progress, and the river,



not then completely frozen over, was running with water on what ice there was. The Hudson's Bay Company's manager suggested we leave our cameras at Moosonee on the mainland—we ourselves were apparently far less valuable in his eyes.

As we crossed the river, avoiding the open V-shaped channel in the middle, the dogs floundered like porpoises and the sleigh left a wake like a ship. The cameraman was shooting Eyemo material. The river-heaved ice looked more Arctic than the Arctic, and the thaw made the "bergs" all the more brilliantly photogenic. The water on the ice didn't show in the pictures, some of which appeared in the "Forward Commandos" issue of the "Canada Carries On" series, and looked appropriately desolate, Northern and frigid.

The Manager sat sideways on the sleigh, ready to jump. The cameraman must have clung on with his legs—his hands were busy with the Eyemo. As for myself, I only know I held the Eyemo case and kept supplying, at incredibly short intervals, fresh rolls of film. We'd have had a Northernly cold christening if the ice had given way! But it didn't, and we reached Moose Factory intact.

In a day or two everything was frozen solid again. I went over to Moosonee alone for the 16mm. cameras. My co-directing cameraman wasn't stirring out of doors. Not because his dog-team experience had given him cold feet (in any sense), but because he had a swollen face from an aching tooth, and the doctor prescribed heat from hot water bottles, not cold from windswept ice wastes.

At Moosonee a miscellaneous cargo of Christmas goods and a kitchen range awaited the eighteen-foot sleigh. The Indian driver thought the camera-cases would be safest between two large packing-boxes near the front; and I felt quite satisfied, too, once they were lashed under the tarpaulins. True, I'd seen the same sleigh upset on a curve at Moosonee; but then it had only had two packing cases on it, and I'd imagined it went over because the load was light. Now with the present impedimenta, especially the stove (like a gun-turret at the rear), I felt it was safely stable.

"Whitt! Hwitt!" the Indian shouted the straight-ahead driving call of the Bay, and the dogs tore down the river bank—a steep thirty-foot descent, at the bottom of which tides had raised a ridge of ice. The sleigh skidded, and, despite the braking efforts of driver, slid sideways against the ridge, where it capsize. The Indians just laughed as they righted the sleigh. After that our trip was uneventful.

The casual way the Indians had treated the upset and our apparent careful stowing of the cameras made me think no harm could have been done. I didn't bother mentioning the incident to my co-worker.

But the next day, out on the ice, a half mile from the Post, with the biting wind peppering us with dry, stinging



snow, I knew something *had* happened to the cameras. The cameraman told me so, plainly, profanely. The speed was wrong. I said that was probably because the day was extra cold. Then the shutter stuck. The cameraman replied that wasn't just the cold, not by a — — —!

Until you've photographed continuously in real sub-zero weather you can't even approximate an adequate idea of just how cold the metal of a camera can get. Not for a single moment can it be touched with bare hands without a sensation sharper than a burn. Usually the cameraman wore thin cloth gloves so that he could make focusing and other adjustments and be protected from the cold metal. But when the shutter stuck, adjustments became too delicate. He had to take off the thin gloves.

Fortunately, his heavy gauntlets hung at his side. In the Bay area duffle-lined (duffle is wool cloth thicker and softer than heavy blanketing), moose-hide gauntlets are worn. Each has a moose-hide loop at the top of its beaded, fur-edged cuff; and through these passes a gaily plaited cord of yarn with tassels. The tassels are pure decoration; the cord pure necessity. It holds the gauntlets on you wherever you happen to be. Forty—even thirty, twenty or ten—below zero is much too cold to casually toss gloves down on the snow. By the time you're ready to put them on, your hands may be starting to freeze; and if you've to grope around in a snow-drift, they'd be frozen white. But with mitts on a string around your neck, all you have to do (if you don't get the strings mixed and try to put on your exposure meter) is to fumble benumbed hands into duffle linings and pray they will get warm again. And this is what the cameraman kept doing until he'd somehow managed to finish the hundred-foot reel, even with the Special behaving as it was. Then we left the ice for our lodgings.

It was relatively comfortable (at least by comparison with outside temperatures) in the big kitchen. Once his hands were warm enough, the cameraman went to work on the Cine-Special. All he had to work with was an assortment of Mr. Woolworth's least expensive screwdrivers and pliers, plus some match-sticks. Here we were—miles from a camera repair shop, and only one train in and one out each week—with a shutter mechanism badly out of alignment and a film to



On opposite page: Cinematographer Douglas Sinclair films the beaver-trapping sequence in a snowstorm. Above, left, cameraman Sinclair and the author iron out a script problem on location. Right, top to bottom: finishing the beaver sequence; dog-team travel; trapper arriving at trading post in scene from "Fur Country;" interior, showing mixture of daylight and battery-powered Photoflood. Photos Courtesy National Film Board of Canada.

finish! But the cameraman effected a major repair job with the scanty tools he had. He got the Special's shutter working, and after the coal-oil immersion, the speed worked, too.

We didn't only learn about what cameras could do in the North. We learned likewise how film behaved. Both have something in common. For cameras and film (exposed and unexposed) had always to be kept at what scientists, I believe, appropriately refer to as the

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## Aces of the Camera XX:

### Rudy Maté, A.S.C.

By WALTER BLANCHARD

A STUDIO publicist once described Rudy Maté, A.S.C. as "the shyest man in Hollywood." Publicity-men being what they are, that's undoubtedly an overstatement; but there's no doubt that the soft-spoken, mild-mannered Rudy is as different as possible from the dashing extroverts fiction-writers like to characterize as cameramen. But that's quite logical, too, for fictional cameramen seem always to be made to appear as hard-boiled technicians, with nothing of the artist even hinted about themselves or their work.

And Rudy Maté is an artist to his fingertips. Half-a-dozen Academy Award nominations testify to that!

As a matter of fact, Rudy Maté had no intention of becoming a cinematographer in the first place; both the profession and the career were thrust upon him by force of circumstances. But once started, he climbed the cinematographic ladder with a rapidity that would seem absolutely incredible today. He made his way to the top in Europe—and stayed at the top; when he came to this country ten or twelve years ago,

his artistry as quickly won him high ranking here, as well. But to tell the truth, he probably took less pride in the fact that last year his professional skill put two of his pictures in the Academy Award Nominees' listing than in the fact that he became a citizen of the U.S.A.

Maté's background was in one way the least likely preparation imaginable for a cinematographic career—and in other ways, perhaps the most perfect. Here's how it happened. Rudy was born some forty-four years ago in Cracow, Poland. His father was a prosperous citizen of what is now Jugo-Slavia, and young Rudy's upbringing was typical of that of any son of Europe's educated classes. The period immediately following the close of World War I found Rudy at the University in Budapest, studying philosophy, with particular attention to the history of Art.

Then came the post-war depression, and one morning Rudy learned that he must start immediately to make a living for himself. Immediately, he went after a job—he wasn't particular what, so long as it brought him a few pengoes a week and half a chance for advancement. By luck, that first job was as a highly unskilled helper in the laboratory of a Budapest motion picture studio. It was hardly the sort of work you'd expect to find a budding philosopher doing. It wasn't a "white-collar" job at all; just work—sometimes messy and always hard. But Rudy went at it with a will: I don't know if, like the Lord High Admiral in "Pinafore," he "cleaned the windows," but he certainly swept the floor, cleaned developing-tanks, carried film about, and helped load the developing-racks and mix solutions. Being of an inquiring mind, he made it a point to learn as much as possible of the why and wherefore of what he was doing. And always he kept his eye alert for a better opening.

One day it came. One of the studio's cinematographers, he learned, was looking for an assistant. Figuratively, at least, Rudy took off his laboratory apron and told the cameraman not to look any farther—that he had already accepted the job!

So young Maté went out on the set as an assistant—for one picture. He carried the camera and held the scene-slate, and made himself as nearly useful as a raw, green assistant could be in those silent-picture days. And he kept his studious eyes open every second, and his mind absorbed everything he saw his chief do. When the picture was completed, Rudy decided he was ready to strike out boldly for a better job.

So he went to Vienna, where he knew they also made pictures—and on a larger scale than they had in Budapest. In Vienna, he found a producer who was looking for a cameraman. Rudy calmly informed him that he was a cameraman from Budapest, and would be glad to photograph the picture. "I didn't think it was necessary," says Rudy, "to

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# THROUGH the EDITOR'S FINDER

IT HAPPENED recently in one of our most major studios—there's no point in saying which one, for we've seen the same thing happen again and again in all of them. And it shouldn't. A certain star made a picture in Technicolor; it was a fine job photographically, and everyone from the Head Man down gave out with raves about what a particularly great cameraman the man who photographed it was.

In due time, that star made another picture—this time in black-and-white. Of course she asked for the cinematographer who had made her so glamorous in her previous production. Equally of course, she got him, and the picture went into production. But after the first few days' work, some of the executives (and perhaps the lady herself) began to ask plaintive questions—why couldn't so-and-so, who had made her look so lovely in her last picture, make her look equally glamorous in this one? As the days went on, that spirit of dissatisfaction (aided, maybe, by surreptitious screenings of pet shots from the previous effort) grew like a rolling snowball, until the various Mr. Bigs had gotten themselves quite convinced that so-and-so wasn't as great a cameraman as they had thought he was. So they took him off the picture, and put somebody else on. The same thing happened with him: he couldn't equal the way the lady had been photographed in her previous picture, and he, too, was replaced. Sometimes this chain of events lasts through the whole of a picture, and places most of the studio's camera staff on the picture (and the spot) for a few days. In the end, the picture gets finished, and the critics surprise everybody by remarking on how lovely Miss Blank looks!

Now, it's entirely possible that any cameraman—no matter how great—can miss in photographing a star. But in this instance, we don't think it was the cameraman's fault, but the fault of the short-sighted executives who made the mistake of attempting to judge their star's appearance in black-and-white by the way she had previously appeared in color. Actually, no such comparison is possible, or fair: even in the rawest amateur's cine-snapshooting, *any* girl will look better in a color shot than she will in black-and-white. With a skilled professional lavishing the glamorizing resources of Technicolor on a star, she's bound to look better than he *or any other cameraman* can make her look in black-and-white. The softer lightings possible in Technicolor tend to conceal the lines, wrinkles and under-eye bags so many of our longer-established stars have, while the same lighting in black-and-white would be objectionably flat and "mushy." In addition, the simple fact of color lends an added, glamorizing dimension that can never be obtained in even the best black-and-white.

We'd like to suggest that in a case like this it would be a great deal more fair—and much easier on the dispositions and nerves of all concerned—if instead of using the star's previous, Technicolor appearance as a yardstick by which to judge, one used her last previous appearance *in a black-and-white picture* as the standard by which to judge present performance. Then, making a direct comparison between black-and-white and black-and-white, the two camera performances could be judged more nearly on their own merits, instead of tipping the scales by adding the unequal comparison between black-and-white and color, in which color always wins!

AMERICA, under the pinch of wartime pressure, is "discovering" the motion picture all over again—not merely as a superlative agency of mass entertainment, but as an educational and socially instructive implement beyond parallel. Not too long ago, we used to laugh tolerantly at the Russians, the Germans, and others who made much of the movie as an instrument of propaganda. Today, we're learning that they were right . . . and learning, too, how to carry the essential messages of democracy to our own people, and to the peoples of our allies and our neutral neighbors, by the powerful voice of the motions picture. Some of our greatest creators, like Major Frank Capra and Major William Wyler, are already in the Government service, making movies for these purposes. Others will follow.

But there's a bottleneck—a serious one—in this process. All too few of the nation's top-ranking cinematographers are eligible to don the uniform of the nation's armed forces as Frank Capra, John Ford, William Wyler, and others have done. Age, health and family responsibilities tend to keep many of them civilians, no matter how much they'd like to become active members of the armed forces.

Yet many of the films now planned not merely need, but absolutely require the services of the industry's greatest cinematographers, if they're to tell their message with full effectiveness.

In view of this, there's much to be proud of in the arrangement worked out between Major Capra, the officials of the A.S.C., and the executives of our major studios, by which the "ace" cinematographers so urgently needed for these vital productions may volunteer their services as unpaid, civilian volunteers, doing their skilled bit to help their country. Briefly, the arrangement is this: a large percentage of our best Directors of Photography are under contract to the major studios, the annual term averaging forty weeks, leaving a twelve-week period during which, at the studio's option, the cinematographer may be off payroll. Ar-

rangements have been perfected so that an A.S.C.-member may volunteer to make a picture for the Government during part of this period—say, two weeks or more—which the studio will apply as part of his annual layoff-period. During this time, the cinematographer will donate his skill to the War Effort as a volunteer, with his expenses (but no salary) paid by the Government agency involved. Should the production in question extend beyond this time, if he is in the clear with his studio's production needs, he will of course complete the production; if his studio needs him, a second volunteer of equal professional standing may take over the assignment, and, if necessary, be followed by a third and a fourth until the project is complete. Free-lance cinematographers are arranging to contribute their efforts similarly.

We can't help feeling a surge of pride at the response already accorded this plan both by the executives of the studios, and by the cinematographers themselves. The needs are so great that the services of virtually every member of the A.S.C. will ultimately be required, as the production-schedules involved permit: by the response so far received—though by no means complete—indicates that Uncle Sam's Army, Air Force, Navy and Marine Corps will be assured of top camera-talent for the filming of their key productions.

DURING these last few weeks, we've been more than a little irked by the implications made by one of our leading national weeklies which has charged the administration with conducting a "Hollywood war," meaning, we gather, a war conducted more by publicity than by sincere, shirtsleeve workers. As to the war itself, all we know is what we read in the papers: but as regards Hollywood, we'd like to invite the writers of those editorials to come out here and meet the Hollywood we know—the Hollywood represented by the members of the A.S.C. and the other technical and creative groups of the industry. No other community or industry, we're sure, can offer any better example of sincere, hard-working ability!

FROM time to time we have the pleasure of meeting readers of THE AMERICAN CINEMATOGRAPHER and learning from them just how their magazine helps them make better pictures, whether as professionals or amateurs. It's very gratifying to have them tell us they consider the information in this journal the best and most authoritative, and that they rely on it implicitly in shooting their pictures. But at the same time, things like that make us feel a great sense of responsibility, which we hope we may never outgrow or disappoint.



# A.S.C. on Parade

Vern Walker, A.S.C., RKO's big yacht and trick-shot man who some time ago volunteered the services of his boat and himself to the Coast Guard's volunteer coastal patrol has been promoted to Vice-Commander of his unit, officially Coast Guard Volunteer Flotilla 23. Nice work, Skipper!

James Wong Howe, A.S.C., is in a unique quandary, with offers of a commission, so we understand, from no less than three military organizations—the photographic sections of the U. S. Army, the U. S. Navy, and the Chinese Army. Meantime, he's very busy, thank you, having just finished Warner's hard-luck picture, "The Hard Way," and immediately starting their \$2,000,000 air-war special, "Air Force," which will keep Jimmie plentifully tied up for the next two or three months glorifying Uncle Sam's War Birds, with unprecedented cooperation from the Air Force.

"Air Force," incidentally, had been scheduled for "Tony" Gaudio, A.S.C., up to the time his recent appendectomy gave him an enforced vacation. Everyone will be glad to know that the popular "Tony" is now out of the hospital and well on the road to complete recovery. "Tony," on his part, is beaming over the way his pal Jimmie Van Trees, A.S.C., is earning executive bouquets for his work on "You Can't Escape Forever," which he took over on short notice when "Tony" was rushed to the hospital.

Over at Columbia, George Meehan, A.S.C., gets the honor of directing the photography of that studio's first Technicolor effort, "The Desperados." Knowing what George can do on even a program "Western" in black-and-white, we're looking forward to seeing his performance on this Technicolor special. Looks like one case where "let George do it" is a good policy!

Karl Freund, A.S.C., has moved to his new ranch in the San Fernando valley, and says he loves the simple life out there among the cows and chickens. Karl steadfastly denies implications that he bought a chicken-ranch to assure himself a supply of eggshells to make the domes of his favorite "Norwood" meters. For the next several weeks, anyway, he'll be busy with quite another type of chickens (non-feathered, Culver City variety) as MGM has assigned him to glamorize their big musical, "Du Barry Was A Lady."

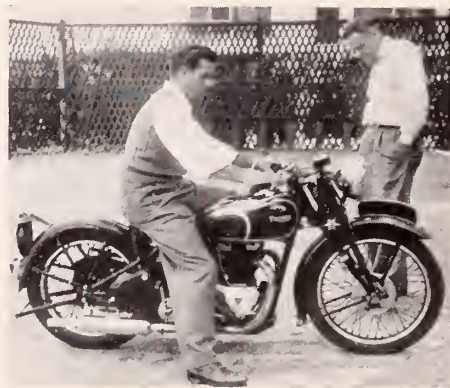
Lee Garmes, A.S.C., says one reason why he bought his present house was that there's a public mail-box right in front of his home—perfect insurance against forgetting to mail a letter for the better half!

Charles Lang, A.S.C., watching with quiet amusement as director Mitch Leisen does a regular Abbott-and-Costello routine when he gets tangled in the camera-tape between scenes of "No Time for Love."

Bob Planck, A.S.C., draws the assignment to "Reunion" at MGM, while Bill Daniels, A.S.C., does likewise on "Keeper of the Flame." There'd be a photographic treat for any double-bill!

Paul Ivano, A.S.C., goes out to Monogram to toss shadows around for their horrific, "The Isle of Terror."

Leo Tover, A.S.C., goes solo Technicolor-wise filming "Star Spangled Rhythm," for Paramount.



Add rubber-savers: Fred Jackman, Jr., A.S.C. Notice the surprise of his dad, A.S.C.—Prexy Fred Jackman, Sr., when Fred, Jr., rolled into the A.S.C. parking lot on a shiny new lightweight motorbike instead of the usual big Chrysler!

With the recently-completed "Eagle Squadron" eliciting all sorts of critical compliments, Stanley Cortez, A.S.C., goes right back to Universal (on loan from David O. Selznick Productions) to photograph Charles Boyer's first producing venture, "Flesh and Fantasy."

A last-minute switch in assignments puts Rudy Maté, A.S.C., instead of William Mellor, A.S.C., on Bob Hope's "They Got Me Covered" for Sam Goldwyn, while Billy goes over to Columbia for Lester Cowan's "The Commandos Come At Dawn," incidentally drawing a location trip to British Columbia just at the time a lot of us wish we had the time (and the tires!) to go a-vacationing there.

Harry Wild, A.S.C., and "Duke" Greene, A.S.C., back from their long trek to Brazil with Orson Welles. They report Brazil a great place to visit, but they prefer Hollywood for picture-making . . . Maybe they just didn't learn the right words in Portuguese!

## Silas E. Snyder

WITH profound regret we chronicle the passing of Silas Edgar Snyder, Editor of *The American Cinematographer* from 1921 to 1922 and again from 1927 to 1929, who died July 13th after a four-year illness. Active as well in the conduct of other phototechnical publications in the industry, "Si" Snyder was known and loved by every member of the camera profession.

When he came to this magazine after a long and successful career as a journalist and motion picture publicist, he found it a shaky little semi-monthly newspaper which hardly justified even the term "house organ." When he left it, he had built it into a substantial technical monthly well on its way to becoming the world's foremost motion picture technical publication. It is not too much to say that without "Si" Snyder's guiding hand during its formative days, *The American Cinematographer* might probably have died before getting well started.

But it is not so much for what he did that "Si" Snyder will be remembered, but for what he was. Kindly, chivalrous, loyal, "Si" Snyder was in the best sense of the term, a fine gentleman of the old school. Never in word or deed would he do anything intentionally to hurt a fellow-being, and his own warm greeting and courtly manner when you entered his office made you feel he felt himself genuinely honored by your visit. His loyalty was unswerving; President Fred Jackman tells of an incident in the early days of the A.S.C. when it was discovered that if Snyder's salary were paid that week, the rent could not be, and Snyder unhesitatingly replied, "That's all right, Fred, pay the rent of course," though he needed the money himself.

Yes, "Si" Snyder will be remembered, and mourned. Though his old-world manner and ideals may have fit ill with these latter days of speed and high pressure, they made all who knew him feel just a bit better for knowing that humanity could produce so fine a man.

Merritt B. Gerstad, A.S.C., joins the Warner camera staff, filming "The Watch On The Rhine."

With Ted Tetzlaff, A.S.C., directing the photography of the Fred Astaire-Rita Hayworth picture "You Were Never Lovelier," we'd say the title was uncommonly appropriate.



# PHOTOGRAPHY OF THE MONTH

## THE PRIDE OF THE YANKEES

Samuel Goldwyn Production; RKO Release.

Director of Photography: Rudy Maté, A.S.C.

Special Photographic Effects by Ray Binger, A.S.C., and Jack Cosgrove.

Photographically, as well as in every other department, "Pride of the Yankees" is without doubt the finest picture we've seen since "How Green Was My Valley." Though centering around a baseball-player, it is not a baseball picture in the usual sense; all of the baseball sequences could be eliminated, and "Pride of the Yankees" would still be an outstanding picture. Yet the handling of the baseball action ranks with the best ever screened.

You really ought to see the picture twice to appreciate how nearly flawless a job of camerawork Maté has done. Every detail of photography and lighting are, perfectly keyed to the mood of the action, but they are kept tactfully in the background. Yet on analysis you'll find that Maté's camera unobtrusively does a great deal to heighten not only the dramatic strength of the story, but also the fine performances of the cast.

Maté in this picture does something only rarely seen on the screen, yet which ought to be an integral part of all dramatic cinematography. The dominant mood of the picture is simple realism. Therefore Maté begins the picture in a simple, realistic style of camerawork—almost commonplace as first you look at it. But from this simple start, he builds the photographic mood slowly, subtly, almost imperceptibly, until when the climaxing sequences of the picture come—especially the final "Lou Gehrig day" scenes—Maté's camera-treatment rises to a visual crescendo which aids immeasurably in arousing an emotional response. The long-shot down the long, bare tunnel from locker-room to field, when Gehrig and his wife stand there before he goes out to receive the last homage of the packed stadium, is one of the most poignantly moving pieces of photography this writer has ever seen on the screen. It is in itself enough to bring a tear to the most hardened eye.

The transition in photographic treatment from strict realism to a building mood begins in the sequence where Gehrig and his sweetheart first hear "Always" sung in the night-club, and watch Veloz and Yolanda dance. There, for the first time, Maté has an opportunity to play deliberately for pictorial effect, and his lightings and compositions (especially in the very interesting compositions while the song is sung) have an unusual blend of pictorially arresting quality and realism. From this point onward, Maté's visual treatment never lets down, but builds consistently to the climax.

His treatment of the players is char-

acteristically fine, especially in the case of Gary Cooper, who sheds many years in the sequences of Gehrig as a youth. Maté has also succeeded in bringing baseball—notoriously one of the most difficult sports to photograph with dramatic effectiveness—to the screen with a perfection that will stand for a long time as a high water mark in the filming of this decidedly non-photogenic sport.

Indeed, there are but two flaws which this reviewer could detect in "Pride of the Yankees," both of them of an essentially minor nature. The first is the treatment of the interior sequence where Gehrig comes at midnight to propose to his sweetheart. Here, it struck me, Maté employed a slightly too heavy type of diffusion, which called attention to the mechanics of photography which had hitherto been kept perfectly subordinated. The other was the inclusion in the montage illustrating the ball-team's travels, of a scene—apparently a stock-shot—made from the rear of a train with the camera at a slantwise angle. This lent a note of "artiness" which was badly out of key with the straightforward treatment of the rest of the picture.

The special-effects work of Ray Binger, A.S.C., and Jack Cosgrove is another highlight of the picture which should not be overlooked. Their work in the ball-park sequences is especially notable, since many of the scenes represented a blend of three or four or even more elements—the intimate action photographed in a Los Angeles ball-park, other portions filmed actually in the Yankee Stadium in New York, and often the skyline of New York or other cities processes in as a photographic multiple printing or as a matte-shot. Their work is in every way as perfect as that of Maté on the production camera.

The production design of William Cameron Menzies, the art direction of Perry Ferguson, and many of the other technical and artistic features of the film are also of such outstanding calibre as to make "Pride of the Yankees" in every way one of the great films of the year.

## MRS. MINIVER

Metro-Goldwyn-Mayer Production.

Director of Photography: Joseph Ruttenberg, A.S.C.

"Mrs. Miniver" is another well-nigh flawless production in every department. The photographic conception of Joseph Ruttenberg, A.S.C., is different from that Rudy Maté had for "Pride of the Yankees," but no way less outstanding. Ruttenberg kept to a more pictorial mood, and in so doing made the grim effects of modern war on England's home front stand out in bolder contrast.

From start to finish, Ruttenberg's compositions and lightings command interest. They're very nearly flawless, and

have an unusual blend of pictorial quality and strength. Such a treatment is singularly appropriate for a story like "Mrs. Miniver," for it visually epitomizes the qualities which have made such a heroic saga of real-life England under the blitz—a land of peaceful countryside and quaint, sleepy villages, with peaceful little river backwaters like that upon which the Minivers' home lies—picturesque, and not too far removed from Dickens' England, yet when occasion demands, concealing a quiet strength that is amazing. Ruttenberg's camerawork reflects all this, and unquestionably plays a vital, if silent, role in making "Mrs. Miniver" one of the great pictures of the year.

The special-effects work throughout—but especially in the Dunkirk sequence—is exceptionally fine, though it seemed to us that the miniature of the warship in this sequence could have been somewhat improved. In this sequence especially we were impressed by the very great quality of the direction and script writing which characterizes the entire production. With all the technical and production resources of Hollywood to draw upon, and a central character taking active part in that amazing operation which achieved the militarily impossible and saved the B.E.F., most directors (to say nothing of producers and writers) would have shown Dunkirk on the screen in all its roaring excitement—and thereby lost the real dramatic thrill of something which was in reality too overpowering to put on the screen. Instead, we see "Clem Miniver's" boat leave its dock in the night and chug its way downstream toward an unknown assignment, steadily joined by more and yet more boats—pleasurecraft and commercial boats, large and small—until at last a mighty flotilla reaches its rendezvous at Ramsgate and heads into the open sea to rescue an army. Then, days later, we see the lone boat returning to its dock, battered and dirty, but its mission fulfilled. Almost entirely by visual means, supported only by natural sound-effects, truly creative direction, writing and great camerawork have made this one of the half-dozen most powerful sequences of its type that we've ever seen.

## YANKEE DOODLE DANDY

Warner Bros.-First National Production.

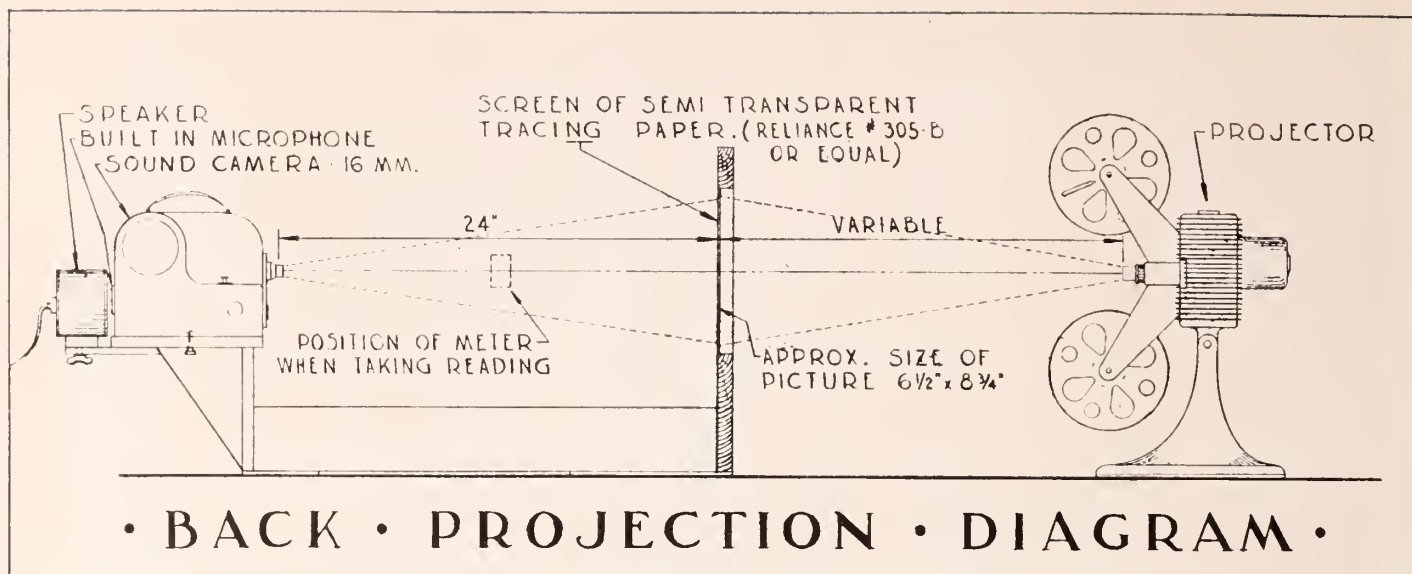
Director of Photography: James Wong Howe, A.S.C.

Special Effects by Byron Haskin, A.S.C., and H. F. Koenekamp, A.S.C.

"Yankee Doodle Dandy" is another of the season's outstanding pictures, and should be on everyone's "must" list. Photographically, it does not give cinematographer Howe exceptional opportunities for pictorialism, but he more than amply holds his own through the

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## Back-Projection Tricks For Home Movie-Makers

By CLARENCE N. ALDRICH

Past President, Long Beach Cinema Club.

THE professionals have a trick known as "back-projection," in which the camera re-photographs a scene projected on a translucent screen behind the actors by an electrically-synchronized projector. They've got another neat little trick known as the optical printer, in which a camera re-photographs film passing through what is to all intents a lensless projector-movement, mechanically interlocked with the camera's movement, to make dissolves, "wipes", moving title-backgrounds, enlarging or reducing film, and so on.

Traditionally, these two professional tricks have been held to be beyond the range of amateur movie-makers, largely because we naturally lack the means of synchronizing our camera and projector movements.

But as a matter of strict fact, quite a few of the members of the Long Beach Cinema Club have been making successful use of non-synchronous back-projection in both 16mm. and 8mm. for some

time! We've used it for reducing 16mm. to 8mm., and enlarging 8mm. to 16mm.; we've used it for "duping" 16mm. to 16mm., and 8mm. to 8mm., and enlarging long-shots to closer angles, in either black-and-white or color; for adding sound to silent films by means of a single-system sound-camera; for making double-exposed titles with moving backgrounds, and even in one instance for making an "insert" scene representing a picture being projected in a theatre. When a reasonable amount of care has been taken in doing the work, the results have been surprisingly satisfactory.

We've done it with just the sort of camera and projection equipment available to most amateurs, too. But there's no reason to believe that the basic idea wouldn't be practical for larger-scale shots—big enough to provide a projected background for at least fairly close angles with people in the foreground—if you had a higher-powered projector (like a Filmoarc) which would give

enough light to illuminate a good-sized background screen. The screens, anyway, are already available—or were before priorities came along.

However, we've contented ourselves to work—and work successfully—on a smaller scale. The equipment I've used consists of a home-made titler, a projector and camera, arranged as shown in the diagram. The more powerful your projector is, the better off you'll be, of course. When adding voice, I use the microphone built into the rear of my RCA sound-camera, and when adding music, I place a small loudspeaker behind this mike, reproducing phonograph-records played on my twin-turntable system. If you're handy electrically, there's no reason why you can't wire your disc reproducer right into the camera's amplifier, so you can eliminate the loudspeaker and combine music and narration.

The film to be projected can be either color or black-and-white, and re-photo-



Left: Back-projecting an 8mm. picture to 16mm. and adding sound-on-film. Center: General layout of back-projection set-up. Note loudspeaker behind camera for recording sound. Right: method of taking meter-reading on back-projected scene.





Left: Black-and-white scene enlarged to close-up and laterally reversed to show actor looking in right direction as he speaks title. Right: 8mm. Kodachrome enlarged to 16mm. Kodachrome and sound added.

graphed with Type A Kodachrome or panchromatic film. If you're working in black-and-white, the faster the film you use in the camera, the better off you'll be, as it will minimize your exposure problems, and enable you to stop down for increased definition.

In 16mm., the film being back-projected should be turned over or reversed laterally, so that the projected picture will appear correctly on the screen. Since 8mm. has only one row of perforations, you can't do this in 8, but you can get the same effect by mounting either a right-angle prism or a front-surface mirror on the projector lens and projecting at right-angles to the camera-screen axis.

Be very sure the film is clean, and select a picture that has as little grain as possible.

The screen I've used is made of a piece of tracing-paper set in the easel of the titler. You can (or could, until priorities intervened) get small screens of the same cellulose acetate the professionals use for their work; but for this comparatively small-scale work, I've found tracing-paper does very well indeed.

If you look at the screen with your eye in the same position the camera's lens will occupy in shooting, you'll probably notice a "hot spot"—a circular area of greater intensity directly in line with the projector's lens. This "hot spot" will photograph as an area of slightly greater exposure than the rest of the picture. You can tone it down by careful application of white talcum-powder to your tracing-paper screen.

The projector should be in the sharpest possible focus, as viewed from the camera side of the screen. Be sure to focus the projector when the film is running through it.

You can determine your exposure by meter, taking the reading with the meter placed half-way between the camera and the screen. To avoid having the meter misled by the room-lighting, have all of the lights in the room turned off when taking your reading, and also when shooting the scene. Since some of the scenes projected may be light, and some dark, it's best to take an average reading, making readings on several different scenes—both dark ones, light ones and normal ones—and averaging up the several readings this gives you. Once you're accustomed to this process, of course, you can learn to "follow focus" on your exposure, opening up the lens for the darker scenes, and closing it down for the lighter ones. But until then, an averaged reading is pretty safe—and lots easier.

The big trick of the whole process is of course making sure that the shutters of your camera and projector don't synchronize "out of step," for if that happens, one shutter will be open while the other is closed, and your camera will

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Frame enlargement of scene made with cylinder distortion.

## DIOPTERS—FOR DISTORTION!

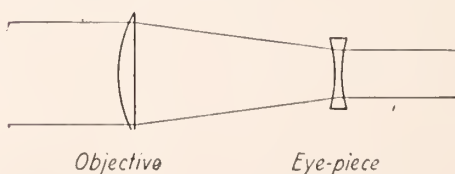
By JOSEPH WALKER, A.S.C.

**D**IOPTER lenses—the inexpensive spectacle-lenses that can be picked up at the five-and-ten or at any spectacle-making shop—are familiar to most amateur cinematographers. They're useful as supplementary lenses to correct the focus of camera lenses for extreme close-up work, such as making titles or extreme full-screen close-ups of flowers and insects.

But they've another use, too: in the proper combination, they can be used to produce deliberately distorted optical effects on the screen. This distortion can be either small or great, as the scene demands. It can be just a slight compression of a scene in one plane (either vertical or horizontal) with an accompanying spread in the other plane, in order to make a landscape composition fill the frame more pleasingly, or to give a close-up something of the lengthened perspective you see in fashion sketches and some of William Mortensen's still pictures. In this case, the distortion would probably pass unnoticed. Or it can be exaggerated for special effects, such as making a Boris Karloff-like character more menacing, or adding either menace or grotesquerie to a nightmare sequence.

First of all, though, let's get started with a good understanding of what a

"diopter" lens really is, and what it does. "Diopter" is simply the term used by opticians to designate the magnifying power of a spectacle-lens. One diopter is the reciprocal of a focal length of one meter; thus a 10 diopter (10 D) lens would have a focal length of 1/10 meter or 100mm. Diopter lenses are available both as positive lenses (rated as *plus* so many D) and negative lenses, rated as *minus* so many D.



GALILEAN TELESCOPE SYSTEM.

For distortion, we make use of a somewhat more complicated supplementary lens set-up, using two cylindrical diopter lenses—one positive, and one negative—assembled like a simple Galilean telescope, as shown in the sketch. A plus diopter cylinder occupies the objective position, while a minus cylinder of greater power takes the place of the telescope eyepiece, and is placed as close as possible to the camera's lens. Both the axes

and the focal points of the two cylinder lenses must coincide. The separation between the two should be equal to the difference in their focal lengths. The magnification produced may be determined by dividing the focal length of the plus lens by that of the minus lens.

From these facts, it is easy to calculate any type of system you want. Suppose you use a +10D cylinder for your plus lens, and a -20 D cylinder for your minus lens. The plus cylinder will have a focal length of 100mm; the minus cylinder will have a focal length of 50mm. The separation between the two should equal the focal length of the difference in their focal lengths, that is, 100mm.—50mm., which equals 50mm. The magnification or distortion produced is equal to the focal length of the plus lens divided by that of the minus lens, in this case  $100 \div 50$ , which equals 2.

Mounting a supplementary lens system like this presents some difficulty these days, since the tube that holds them should keep them accurately aligned, and yet permit adjusting the separation between the two, and also permit one of the lenses to be rotated with respect to the other, so that the final adjustments can be made with the device in position on the camera.

Ordinarily, a pair of metal tubes, one of which fits fairly snugly inside the other, would be the thing to use. But today, most metals are on priorities, and most machine-shops (other than home workshops) are likely to be busy on more important jobs than gadget-building for amateurs. Luckily, though, spectacle-lenses are so light that you can get around priorities by using stiff cardboard tubing of appropriate diameter. This incidentally has the advantage of being light enough so the gadget can be mounted directly on the camera lens, rather than requiring a supporting arm extending from the tripod-head. In a mount like this, you can hold the spectacle-lenses in place either by using cardboard retaining-rings, which can be glued into place, or Scotch tape.

For long-shots, this system is complete in itself. But if you are going to use it making closer shots, you'll need to add a spherical auxiliary lens (not a cylinder lens as in the distorting system) in front of the plus cylinder to correct your focus. The focal length of this supplement should be equal to the distance between camera and subject: that is, if the subject is  $6\frac{1}{2}$  feet from the camera, use an auxiliary with a focal length of 2 meters—or a plus 0.50 D spectacle-lens—to refocus your optical system at  $6\frac{1}{2}$  feet.

The amount of distortion is determined by the overall power of the supplementary-lens system: for most purposes a set of these cylinder-distortion supplementaries ranging in magnifying power from 1.2 to 1.6 will prove satisfactory. More powerful units can be

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# EXPLAINING "MONTAGE"

By LINWOOD G. DUNN, A.S.C.

**M**ORE people—amateurs and professionals alike—talk knowingly about "montages" and the "montage technique," but actually know less about it, than about almost any other phase of movie-making. If you asked most of these people to define the term, you would either get a highly misleading answer, or reduce them to embarrassed silence.

Just to get myself out on that inviting limb, I'd define a montage as an assembly of comparatively short scenes, not necessarily related to each other in content, but which when viewed together serve to convey a definite story point or dramatic idea, and do it in less footage and more effectively than would be possible by conventional methods.

The word "montage" means assembly, anyway. It came into the language from the French by way of Moscow and Hollywood. Up to the start of World War I, the French were the top craftsmen of the world. French cameramen and directors found their way into studios all over the world, and they took many of their technical terms with them. One of these was the verb "*monter*," meaning literally "to mount or assemble," which was their term for what we call cutting or editing. The act of editing film, and also the assembled film, was termed a "*montage*," literally, "assembly."

From 1914 to 1918 the French had other things to do than make pictures, and when the war was over, they never regained their dominant position in the film world. But they had left the imprint of their technical terms, especially in Europe's studios.

One of the places where French film-terminology persisted was in Russia, where a group of young directors headed by Sergei Eisenstein were beginning to turn out pictures which had a visual impact that startled the entire film world. These directors were making their pictures not only to entertain the Russian masses, but to educate them. They knew that a majority of the people who saw their pictures would be unable to read the subtitles, either because they could not read, or because they spoke one of the several hundred non-Russian languages and dialects used in the Soviet Republic. They knew, therefore, that they would have to make their pictures as visually telling as possible.

To that end they studied and analyzed the technique of the best silent pictures available—especially American ones. One principle they found was the use of a succession of quickly intercut scenes ("flashes," we called them) to get over a dramatic point in a minimum of footage and with maximum force. D. W. Griffith had used it even in his early pictures. So had many other American

directors. A familiar and simple example would be the way in the old thrillers they used to intercut scenes of the heroine bound to the railroad track with quick, short shots of the onrushing train and perhaps other shots of the hero on his ride to the rescue.

Eisenstein and his associates took this idea and boiled it down to maximum strength, so to speak. They found that they could not only use this trick to deliver a dramatic punch, but often to tell in a comparatively few feet of film a rather involved idea or concept. But Eisenstein reduced these "flash cuts" to scenes far shorter than anything previously attempted. Instead of measuring these cuts in feet, he often measured them by frames. In his scripts one can frequently see the notation "27 frames long"; "12 frames"; "6 frames in length." Some scenes might contain only three frames.

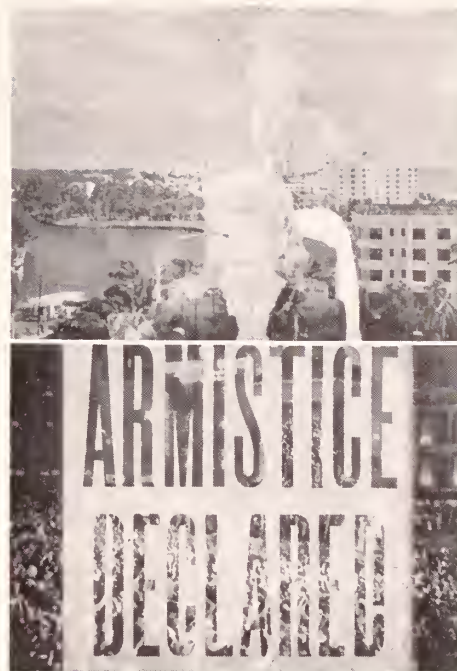
Very often, these sequences would follow a progressive pattern, repeating the same "flashes" several times in succession, but each time in shorter footage, so that the sequence built up a rising tempo, and often a very strong visual impact.

Eisenstein himself regarded this technique largely as a matter of cutting, so he naturally applied to it the term he commonly used for cutting—"montage."

When Eisenstein's pictures and his descriptions of his methods reached Hollywood, we took this technique up enthusiastically, using the same name as the Russians had used, and adding to it technical resources which we had but which the Russians apparently did not have, such as the superimposition of scenes by multiple exposure and optical printing. Today, the material for our montages is specially shot for the purpose, and then put together in the optical printer. Our montages are not always as short or bewildering as those early Russian ones were, but we can often use them to convey more complex ideas.

To make clear the difference between the original concept of a montage and the present one, let's see how two directors, one in early-day Moscow and the other in present-day Hollywood—might arrange a montage to convey the same basic idea, say the part a central character might play in the defense of Moscow last year.

Your Russian director might begin with a long-shot of the battle front, with the Nazi forces moving across the screen in attack, travelling from right to left. Then he would cut to a slightly shorter long-shot of the Russian defending line, with its guns firing, aimed, of course from the left to the right side of the frame. Then a head-on shot of his hero, firing his machine-gun. Then a much shorter flash of a Nazi tank—a flash of



Two frame-enlargements from superimposed-image montages. Above, close-up of actors against black-velvet background superimposed on a long-shot. Note how much better the upper part, "doubled" against a flat background, is than the lower part which has a more contrasty background. Below, insert of a newspaper headline double-exposed against a long-shot.

the hero—a flash of a Nazi infantryman throwing up his hands as the bullets felled him—flash (about a foot) of the hero—flash of the tank—flash (shorter yet) of the hero—flash of the German falling—flash of the flare from the hero's gun-muzzle—several flashes, short and from different angles, of falling Germans—flash of the gun-muzzle—flash of Germans turning back—flash of the hero, shooting—flash of Nazis in retreat—and a final, comparatively long close-up of the hero, at last ceasing fire.

Your American director might handle the same montage this way. He would probably begin in very much the same manner, with two long-shots of the two contending forces, the Nazis advancing, the Russians opening fire. Then he, too, might cut to a head-on shot of his hero firing the machine-gun, followed by flashes of the tank advancing and Nazis falling. Then he would cut back to the head-on shot of his hero, holding it throughout all the rest of the montage, and over this he would superimpose a succession of "flash" shots of falling Nazis, the close-up of the gun-muzzle, the long-shot of the Nazis turning back, the gun muzzle again, and finally the Huns in full retreat, fading out this superimposition as the hero ceased firing.

There would probably be no great difference in the footage the two would employ, for while the Russian would use more cuts in his montage, they would be individually shorter, and the American's telescoped superimpositions would probably make use of somewhat longer

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Frame enlargement of a 16mm. scene filmed under water at Silver Springs, Florida.

# Making Movies Under Water

By THOMAS TUTWILER, A.S.C.

**I**F you're looking for new cinematic worlds to conquer, you can find one—literally—by taking your camera underwater. You've probably seen what the professionals have been doing along these lines in such pictures as the MGM "Tarzan" films and (in Technicolor) Paramount's "Bahama Passage" and "Reap the Wild Wind," to say nothing of a number of short-subjects. You can do the same thing in 16mm. and 8mm., even in Kodachrome, and get pictures that are really different from the ordinary run of home movies.

The first problem, of course, is how to get your camera under water without soaking it. There are plenty of ways to do this. For instance, if you should happen to be in Florida, you can make use of the same facilities the professionals used: the two underwater "camera boats" at Silver Springs, and the "hole in the water" at Wakulla Springs, which Lloyd Knechtel, A.S.C., described in *THE AMERICAN CINEMATOGRAPHER* about a year ago. Naturally, if you're an amateur shipwright and live on or near a river or lake where you can have a boat, you can build one of these cinematic submarines for yourself. All that's necessary is an open-topped box or tube big enough to contain the camera and cameraman and deep enough to get your lens six or eight feet below the surface. It can be built as a part of a fair-sized boat, as in the Silver Springs submarines, or attached to a barge or diving-float as in Wakulla's "hole in the water."

In either case, it is sunk to the proper depth by ballasting with rocks or concrete blocks, and the camera shoots out into the water through a plate-glass window.

But this sort of construction is rather ambitious for all of us except the most ardent home-workshop addicts. A simpler way of getting underwater movies is to shoot your pictures in a swimming-pool from one of the glass-windowed observation ports which are being built into more and more private pools, and some public ones, as well.

Another way to do it is to build yourself a smaller "hole in the water," just big enough to hold your camera, while you work it from above. The gadget itself is of course simple enough—just a long, narrow box, open at one end and with a plate-glass window at one side of the bottom through which to shoot—but there are two ways of mounting your camera. One is to mount it at the top of the box, handily out in the open air, shooting down toward the bottom of the box, where a mirror reflects the image seen through the porthole up into the lens. This is handy, but unless you use an expensive and delicate front-surface mirror, you're likely to have trouble by getting a double image from the mirror—one reflected by the silvered reflecting surface, and a secondary image, slightly out of register, from the front surface of the glass.

A more practical idea is to put the camera down at the bottom of your tube,

so that it shoots directly out through the port, and operate it by a simple remote-control lever. The problem here is sighting the shot when you're in a position where you can't use the regular finder. But this can be solved easily enough by making the porthole a bit bigger, and outlining on the glass at one side of the camera a rectangular field matched to the field of the camera, and reflected up to your eye by an inclined mirror. Since your tube may not be perfectly water-tight, it's a safe practice to mount your camera three or four inches above the bottom, so if any water seeps through, it will collect below the camera.

Finally, there's the possibility of putting both the camera and yourself into diving helmets, and getting your pictures that way. There seem to be quite a number of diving addicts in all parts of the country who have made themselves simple diving helmets—usually a properly-shaped end-section from an old water-heater boiler, which fits snugly over their shoulders and receives air pumped down through a hose, while they look out at the underwater landscape through a glass window in the front of the helmet.

If you can borrow or make one of these outfits, you'll find there's a lot of fun in going down yourself and shooting your pictures with the camera in an underwater diving-box. Quite a few of these have been made, some very professional, like the one Lt. Al Gilks, A.S.C., U.S.N.R., took around the world with him several years ago, and others more amateurly simple, like the one director Norman Foster used one vacation in Tahiti. Foster's gadget consisted simply of a watertight box with a plate-glass window for the camera to shoot through, and another window in the rear through which he could watch the finder. The whole front of the box was removable to permit inserting and removing the camera, and was held in more or less watertight seal by means of bolts (tightly screwed down with wing-nuts) and a rubber gasket. The camera was held tightly in place by wooden blocks fitted to match the shape of his camera, which happened to be a Bell & Howell Eyemo, and a simple lever connection passed through a watertight joint so that the camera-release could be worked from outside. A strap of strong webbing passed around the box, and heavy weights were attached to the bottom of this strap to balance the camera and to offset the buoyancy of the device. The strap also served as a handle by which the camera could be manipulated underwater. Foster, clad himself in a regulation diving suit, took this box down to depths as great as 50 feet and brought back excellent pictures.

No matter how you choose to get your camera beneath the waves, you'll find there are definite photographic tricks to be learned if you want good underwater movies. Most important of these are the effect of the refraction or light-bending action of the water on your focus and

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# AMONG THE MOVIE CLUBS

## Films For Exchange

In normal times, cineamateurs often have the pleasure of meeting members of other clubs throughout the country by dropping in on local club meetings while on vacation trips. But such trips are out "for duration" in the interest of conserving gasoline, tires and transport facilities. Therefore the idea advanced by the Indianapolis Amateur Movie Club (see picture) seems to have unusual merit at this time. Briefly, they are making a 16mm. sound-film (also silent versions) introducing the officers and members of their club, for exchange with other clubs. At least one other club—the Long Beach Cinema Club—is considering a similar production. Since we all are interested in seeing how people about whom we've read, or with whom we've corresponded, look and talk, it seems like an idea that's well worth supporting. We're looking forward to the privilege of reviewing these and any other similar films.

Received this month for review is PHILADELPHIA ZOO (200-ft. 8mm Kodachrome) made for inter-club exchange by the 8-16 Movie Club of Philadelphia. This is not only an interesting record of this club's visit to America's oldest zoo, but contains some unusually interesting scenes of the various animals, made often from angles much more intimate than the usual zoo-visitor can obtain. Available from the Club's Exchange Officer, George Burnwood, 3035 Disston St., Philadelphia, Pa.

## Tri-City Elects

At the final meeting of the Tri-City Cinema Club (Davenport, Ia., and Rock Island-Moline, Ill.) before the summer vacation, the following officers were elected for the coming year: Dr. Paul A. White (Davenport), President; Georgia T. First (Rock Island), Vice-President; Secretary-Treasurer, Willis Lathrop (Davenport), and as Directors, Harold Hainline, Harold Swanson, and Dr. F. J. Vermeulen.

Winners of the Club's annual Contest were Tom Griberg (8mm.) and Georgia First (16mm.), respectively, with "Mother's Little Helper" and "Skippy Sees the Zoo." Clifford Paul, A.R.P.S., was the judge. Runners-up in the 8mm. division were Willis Lathrop and Thomas Severs; in the 16mm. division, Dr. A. H. Parsons, Dr. Albert N. Mueller, and Harry Knox.

The prize-winning films were screened, as were also "Suzanna," loaned by the Long Beach Cinema Club; "New Hampshire on Parade," International prize-winner loaned by Fred Ells of the Los



MEET INDIANAPOLIS! Feature of a recent meeting of the Indianapolis Amateur Movie Club was the making of a 16mm. sound-film of the Club's members. Seen in the picture, from left to right, are Dr. Joe Sovine (behind the "coke" bottle); Past President Elmer Culbertson at the camera; Paul Bradley under the tripod; G. A. Del Valley at the sound-mixing controls; and President Dr. William E. Gabe seated at the desk. This film is being made for exchange with any club that might be interested in seeing and hearing their fellow acetate-burners in Indianapolis. A similar film on silent 16mm. and 8mm. film is being planned to be sent to clubs which do not have access to sound-projection equipment.

Angeles Cinema Club; and "Doomsday," by Ruth Stuart of the Institute of Amateur Cinematographers, of England, loaned by THE AMERICAN CINEMATOGRAPHER.

GEORGIA T. FIRST.

## Sound, Sports For San Francisco

A home-made sound-on-film camera was the scheduled feature of the July meeting of the Cinema Club of San Francisco. Its maker, Ray Maker, of the Greater Oakland Movie Club was to give a short talk on 16mm. sound-on-film, and show a reel from his current 16mm. sound production, "West of the Brazos." Members' films screened included "Sportsman's Paradise," by Russ Pettengill; "Fisherman's Wharf," by Mrs. A. H. Agaton, and "Yosemite Valley," by Ray Luck.

E. L. SARGEANT, President.

## Exchanges For Syracuse

Featured on the program of the June meeting of the Syracuse Movie Makers Association was an exchange film, "Bottleneck," from the library of the 8-16 Movie Club of Philadelphia. Two of the Syracuse Club's productions, "Henry's Hobby," and "Haunted School," have been sent to Philadelphia in exchange.

Also shown was "Spike Becomes a Scout," a 45-minute Kodachrome sound-on-disc film with lip-synce dialog, made by one of the Club's members for Scout Troop 5 of Syracuse and written and

acted by the scouts. Member Kellogg's film, "June Bride," and Member Culen's film on artificial breeding of carp at the State Fish Hatchery were shown.

At the July meeting, a lecture on Kodachrome and the uses of wide-angle and telephoto lenses was given by A. D. Rodger. The Club has recently purchased a new 6-foot portable screen, and are now contemplating making a projection-booth along the lines of the one suggested by the Long Beach Club's Harold O'Neal in a recent article in THE AMERICAN CINEMATOGRAPHER. Many thanks for that article—may we have many more of them!

LISLE D. CONWAY, President.

## Aussies Entertain Army Camps

A volunteer group from the Australian Amateur Cine Society is now operating under the Australian Army Educational Service to provide 16mm. film entertainment for troops in camps within 30 or 40 miles of Sydney. Members of the group include G. J. Menon, sponsor of the scheme, Vice-Presidents R. Lowe and J. H. Couch, and members Rex Sharpe and C. S. Crouch. Equipment used includes 1,000-Watt Filmosound and Amprosound projectors with a 9-foot screen. Professional films from various sources are used, and the unit is out at least three nights per week, showing to audiences ranging from 100 to 500 or more men. The Army lends all possible as-

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# WHY NOT TRY MAKING THIRD DIMENSIONAL MOVIES?

By PHIL TANNURA, A.S.C.

**I**F you're one of the many amateurs who are looking for something new to take the place of pet locations or subjects that have landed on Uncle Sam's restricted list, why not try third-dimensional movie-making? Seeing your movies stand out in real, stereoscopic depth will give new life to even the most familiarly commonplace scenes.

Suggesting that amateurs try making third-dimensional movies when the professionals haven't done it yet on any really commercial scale seems fantastic, doesn't it? But it really isn't. Quite a few amateurs have already made successful stereo-movies in both 16mm. and 8mm., and in Kodachrome as well as black-and-white.

In things like these, the amateur really has quite an advantage over the professional. The professional has to make sure that whatever he does can be applied on a commercial scale. The amateur—lucky fellow!—doesn't have to worry about that so long as the idea doesn't run into a matter of too much expensive or unavailable equipment. In this case, it means that the amateur can make his third-dimensional movies by a method the professional has known about for a long time but couldn't use because of commercial complications that come up when you are showing the pictures to several hundred audiences a day.

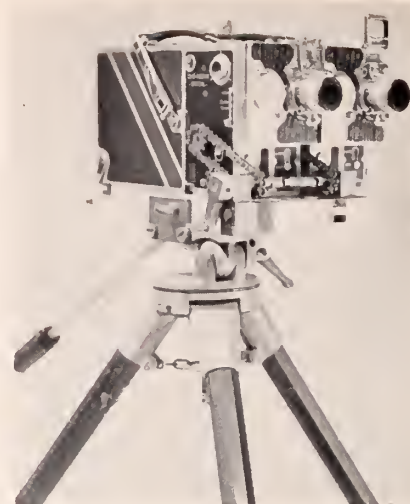
There's nothing particularly new about making third-dimensional photographs. The principle used today is basically the same one used in making the old-fashioned stereographs that graced every

parlor whatnot back in the days when bustles and sideburns were in fashion. It works just as well for movies today, but we've got the necessity of working out a better method of viewing our movies than the old-time stereoscope afforded.

We see depth because our eyes are a slight distance apart (the average separation is 2½ inches), and each eye sees things from a slightly different angle. The right eye sees a little more of the right side of things than the left eye does, and vice versa. And our optico-nervous system is so arranged that each eye telegraphs its own picture to the brain, where the two slightly different images are blended into one third-dimensional one. All stereoscopic vision depends on this matter of two-eyed seeing; a man with one eye can't perceive depth at all.

To get a third-dimensional photograph, all that is necessary is to make two almost identical pictures of a scene through a pair of lenses that are spaced about the same distance apart as the average human eyes, and then to provide some method of viewing these pictures so that the right eye can only see the right-eye picture, and the left eye sees only the left-eye picture. Our brains will do the rest, blending the two into a single image with natural depth and roundness.

Grandfather's stereoscope did this optically, putting a lens in front of each eye to focus it properly on the appropriate picture, and generally providing



Two Cine-Specials mounted and interlocked for third-dimensional filming.

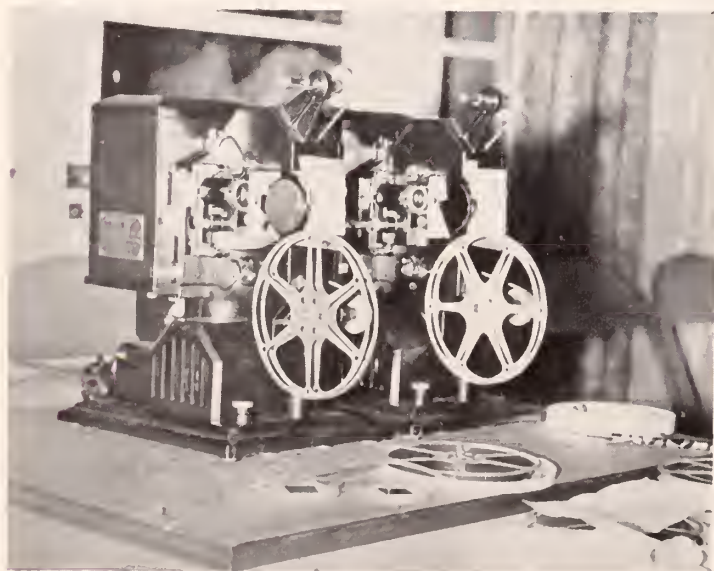
a little plywood panel between the lenses to make sure the left eye didn't get a chance to peek over at the right-eye image.

The occasional experimental three-dimensional 35mm. movies, like the MGM-Pete Smith "Audioscopes" short-subjects, did the same thing by a complementary-color filtering. The two necessary pictures were printed on a positive film with an emulsion on each side of the celluloid base. One emulsion was dyed red, and the other blue-green. Everyone in the audience had a little spectacle-like card through which to look at the pictures. Over one eye-hole in this card was a bit of red gelatin, which let the red image go through but completely filtered out the blue-green one, and over the other eye-hole was a blue-green gelatin which kept the red image from passing through.

The best system for amateur use, however, is to keep the two images always on separate films, and run them on two synchronized projectors with a polar-screen over the lens of each projector. These pola-screens are "crossed," so that the light from one projector is polarized in one plane, and the light from the other is polarized in a plane at right angles to that of the first. The audience wears spectacles with similarly crossed pola-screen lenses, so that each eye can only see its proper image.

The mechanics of making and showing stereo-movies by this method isn't so terribly complicated, but since it calls for two cameras and two projectors, probably the best way to handle it these days would be for two filers to team up on it. The mechanical end of the problem will certainly be most easily handled if both cameras are of the same make, and both projectors also of the same make.

The two cameras should be mounted on a base which not only holds them firmly aligned, but provides a means for mechanically interlocking their mechanisms. Metal construction is naturally best for this base, but in these days of



Dr. Ghrist's projection set-up for stereoscopic 8mm. Note viewing spectacles in foreground, and rigid base mounting.

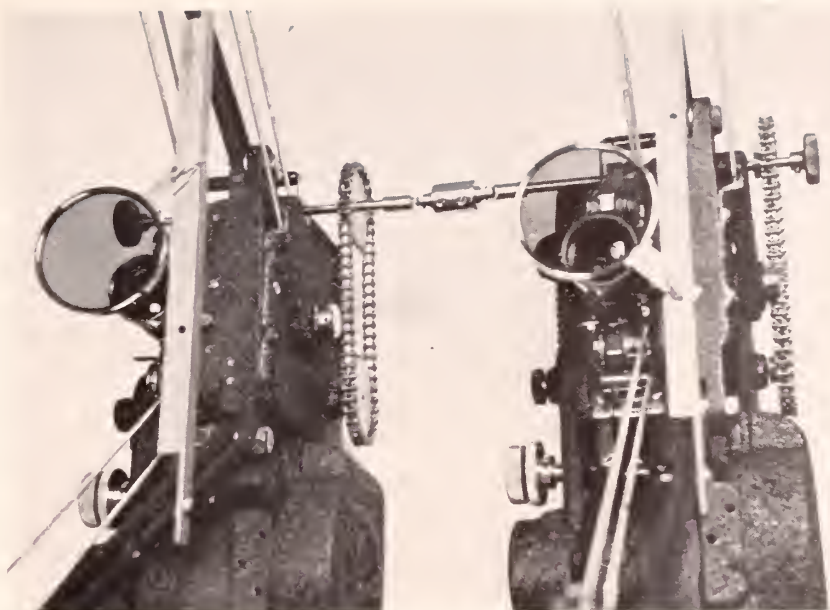


priorities on metal, wooden construction—if sufficiently strong and accurate—should certainly not be scorned. The base should provide for mounting the cameras so that their lenses are horizontally parallel, and spaced  $2\frac{7}{8}$  inches apart from center to center. It should also provide the necessary  $\frac{1}{4}$ -inch bolts to screw into the cameras' tripod-sockets for attaching them to the base, and a similarly threaded socket (a countersunk nut will do) by which the base may be attached to the tripod.

Some of the amateurs who have experimented in third-dimensional cinematography have gotten adequate results mounting their cameras on a base which held them rigidly in fixed position, but I think a much better plan was one used by one experimenter, J. Kinney Moore (a two-time prize winner, by the way, in THE AMERICAN CINEMATOGRAPHER'S International Amateur Movie Contests), who divided his camera-base lengthwise along the center-line, and hinged it at the front end. This construction has two advantages. First, it permits swinging the left-hand camera outward so that the right-hand one can be more easily reloaded. More important from the standpoint of results, it permits the cameras to be "toed in" so that both are centered on the same object, to minimize objectionable parallax effects. The point to align the cameras on is usually the most distant *important* object in the scene. Pictures made with a camera set-up that can be lined up this way are usually more easy on the eyes than those made with a fixed-camera set-up.

Mechanically interlocking the movements of the two cameras is a problem that differs according to the type of camera used. It is easiest with cameras which, like the Cine-Special, the Bolex, the Victor and some of the Filmo 70's, have or can be fitted with a hand-crank drive. In this case, all you have to do is insert a short shaft into the hand-crank shaft opening of the cameras, fit a sprocket to each shaft, and interconnect the cameras by means of chain belts and a common shaft in the base. If you use a pivoted base, of course, this connecting shaft should be fitted with a universal joint so that the cameras will operate together when "toed in."

With other types of cameras, this matter of interlocking may not be so easy, as it will probably require a minor operation on the mechanism side of the camera-case to gain access to some shaft or gear in each camera that you can use for establishing the interlock. Another experimenter, Dr. O. E. Ghrist, of Glendale, California, found it comparatively simple, though, using two Model 20 Eastman "eights." Dr. Ghrist made use of the large winding-gear on the motors of these cameras. He cut an aperture in the case of each camera (on the motor side, of course) to expose these gears. He had a similarly toothed gear in the solid shaft in the base which interconnected the two cameras. Then it was a



Three-dimensional projection set-up, using two Ampro 16mm. projectors. Note simple but positive interlocking system from hand-turn shafts, and mounting of pola-screens rotated at right angles to each other.

simple matter to mount the two cameras so that the gears protruding from the base meshed with the gears on the winding-shafts of the cameras, forming a simple and positive mechanical interlock.

The same basic methods can be used in mounting and "syncing" the two projectors for showing the stereo-films. The projectors should be mounted on a common base, with some sort of provision for "toeing in" one projector, so that regardless of the projection-distance, the two images can be projected in approximate register. Absolute register isn't possible, of course, since the right-hand and left-hand pictures are taken from slightly different angles; but if they are pretty accurately superimposed, the audience will find the pictures a lot easier to look at.

Setting up a mechanical interlock is usually easier with projectors than with cameras. Most 16mm. and 8mm. projectors have a shaft—usually at the front of the projector—which carries a knob by means of which the projector can be turned slowly by hand when threading. With the hand-turning knobs removed, these shafts offer an ideal means of interlocking the projectors.

If you are going to do all or most of your projection at a fixed distance, you can simply put a sprocket on each shaft, and interconnect them by a chain belt. If you expect to change your projection screen distance frequently, you'll have to allow for changing the "toe-in" of one projector, so your interlocking mechanism will have to be more flexible. One way to do this is to fit a pair of bevel gears to each projector and interconnect them with a horizontal shaft which is fitted, of course, with a universal joint.

In front of each projection lens is mounted a pola-screen, either attached directly to the projector (separate from the lens, of course, so that the polarizer

won't be revolved when the lens is focused!) or supported by an upright from the base on which the projectors are mounted. The pola-screens should of course be rotated so that their planes of polarization are at right angles to each other. Since the pola-screens in polarizing the light, also absorb a lot of it (on a camera they have a factor of 4), you'll do well to use the most powerful projectors and globes you can get. Even then, you'll notice a loss of brilliance compared to normal "one-eyed" projection.

Since the screen has to reflect polarized light, an old-fashioned silver-surfaced screen with a very uniform, smooth surface is best. If you make your own screen, use a metallic silver paint and paint it—or, better, airbrush it—on with the brush moving only in one direction across the screen rather than with a two-and-fro stroke.

The audience must be supplied with some form of polarizing spectacles through which to view the picture; otherwise, all they'll see is an incredible-looking double image on the screen. The cheapest way to do this is to get your polarizing material in gelatin sheet form, and cut it up as necessary. You don't need a big piece for a viewing-polarizer: a square  $\frac{1}{2}$  or  $\frac{3}{4}$  of an inch in size is ample, and you can even cut this down to a rectangle  $\frac{1}{2}$ -inch long by  $\frac{1}{4}$ -inch high and still give plenty of room for viewing a small-screen picture. The gelatins can be cemented to a cardboard disc which in turn is mounted in a pair of dime-store spectacle-frames or, if you want to be especially conservative, mount the polarizers in a small, mask-shaped piece of cardboard which the spectator can hold in front of his eyes. If your stereo program is more than about half a reel in length, though, the spectacle

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# BUSINESS MOVIES

## CATERPILLAR DIESELS GO TO WAR

Promotional news-documentary, 1400 feet black-and-white, sound.

Produced by Caterpillar Tractor Co.

This is in many ways the best of this firm's films we have yet been privileged to view. In characteristically swift-moving fashion, it tells something, at least, of the tremendous job "Caterpillar" tractors and diesel power-units are doing in America's War Effort, preparing airfields, Army Camps and bases, to say nothing of aircraft, munitions and other war production plants in every corner of the country. When to the bewildering number and variety of projects shown in this film are added (as every viewer will do mentally) the many highly secret projects being similarly carried out here and abroad, one can't help feeling America is marching to war on caterpillar treads.

Technically, this picture is excellent. It seems to be an interesting blend of really good reductions from 35mm. and equally good black-and-white duplicates from direct-16mm. Kodachrome. The photography is excellent, and the laboratory work well above the usual standard of black-and-white commercial 16mm.—quite the best, in fact, that we've seen in some time.

The sound-recording is the best we've yet heard on a "Caterpillar" picture. Either the recording studio has changed their 35mm. characteristics to match those of 16mm. projectors, or (which seems more likely) the recording was done direct in 16mm. In any event, the sound is excellent.

## GIFTS FROM THE SUN

Documentary on fruit-drying; 800 ft. Kodachrome, sound.

Produced by W. A. Palmer & Co.

Presented by California Packing Corp. (Del Monte).

Making a color-film for a fruit-packing organization like Del Monte is an acid test of both the cinematographer and the laboratory producing the Kodachrome duplicate release-prints. In this case, W. A. Palmer & Co. did both, and performed both tasks magnificently. We pride ourselves on having a rather critical eye for color-reproduction, but we don't see how the color in "Gifts From The Sun" could be improved. The photography is first-class, and the color print one of the finest, if not actually the finest we've ever seen.

The picture deals with the preparation of sun-dried fruits—apricots, prunes, raisins, etc.—and obviously had to be shot when the fruit-pack permitted, rather than when the director-cinematographer chose. Luckily, however, the well-publicized California sun was the

drying agent, and thus simplified weather problems on the many exterior scenes. The interior scenes show an exceptionally good understanding of the methods of controlling the color-temperature of lighting, and balancing both lighting and exposure to give the best color-reproduction. The sound is, as usual with Palmer's recording work, top-quality direct-16mm. recording.

The story-construction of the picture is entertainingly handled, with the narration a three-way affair between the sun and a married couple apparently in the audience.

## BEHIND THE RED SHIELD

Documentary, 1100 ft. Kodachrome, sound.

Produced for the Salvation Army by Randolph Clardy.

Direct-16mm. recording by Telefilm.

It is probable that this picture was produced on a rather limited budget and schedule, but Clardy's picture-making skill makes it interesting throughout. His treatment of the central character of the film's rehabilitation theme is excellently dramatic, and his photographic treatment—especially his lightings wherever he had any opportunity at all for studio-type lighting—is technically first-rate. His handling of other phases of the subject-matter is good, especially in the way he makes the film answer the question we all ask about what does the Salvation Army do with all the broken-down furniture, clothing, etc., it collects for salvage. All told, the picture should do its sponsors a lot of good, in almost every part of the country.

## MEXICO BUILDS A DEMOCRACY

Documentary, 800 ft. Kodachrome, sound.

Produced by Contemporary Films for the Office of the Coordinator of Inter-American Affairs.

Direct-16mm. recording and Kodachrome duping by W. A. Palmer & Co.

Primarily an instructional film, this picture is more properly an inspirational film, for it tells a moving story of Mexico's impressive campaign against illiteracy. A faithful re-enactment of recent events, the picture shows how a young Mexican teacher, after first mastering the language of the Indians of the region, goes forth alone to spend six months in a remote little mountain village, while he teaches the Indian inhabitants to read, and trains from among the villagers a teacher to follow in his footsteps after he leaves. There is drama in the way he saves the village from an epidemic, and throughout are innumerable characteristic touches which will help us better to understand our nearest

southern neighbors.

Technically, the picture is excellent. Photographed on the actual locations, deep in the mountainous heart of Mexico, it was by no means an easy photographic assignment, but it is very well handled. A few more close-ups of the big-head variety would have been welcome, but this was probably impossible because the cast was composed entirely of untrained actors. The story is told in silent form, with narrative sound and a musical accompaniment of authentic Indian melodies of the region. The recording and the Kodachrome release-print are among the best yet seen. The optical effects also deserve comment, not only because they are very well done, but because of the smooth way they fit into the picture.

All told, we can recommend this picture very highly, not only to schools and educational groups interested in learning more of Mexico and obtaining an entirely new appreciation of the Indian mentality, but to photographic groups whose interest may be expected to be strictly technical.

## Movie Clubs

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sistance, including aid in planning programs and providing transportation to hard-to-reach camps. Special leaders have been made up, using the name and insignia of the A.A.C.S., and are attached to the films shown.

JAMES A. SHERLOCK,  
Publicity Officer.

## Travel-Films For Long Beach

The July 15th meeting of the Long Beach Cinema Club headlined two excellent 16mm. Kodachrome sound-films loaned by the Union Pacific Railroad. Titled "Moon Over Sun Valley," and "Yellowstone Park," these films were a tantalizing reminder of vacation pleasures back in the days before rationed tires and priorities on travel.

PRUDENCE BRAKLOW,  
Secretary.

## Montage

(Continued from Page 359)

footage for each idea. The visual effect would be different, but the idea conveyed would be the same.

Both of these types of montage have a definite place in picture-making—amateur picture-making by no means least. I would suggest using the Russian type of montage, made up of a succession of increasingly short "flash" cuts accented by the use of striking camera-angles, for occasions where you want to build to an extremely fast tempo in getting over an impression of strife or quick-paced confusion. A good example might be in a picture dealing with a lost dog, in a sequence where you wanted to convey something of the poor dog's terrified confusion at finding himself in the mid-



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dle of a big-city intersection, with cars apparently rushing at him from all sides. Assembling by this technique a succession of "flash" shots—all made shooting upward from a low position, and if possible with a wide-angle lens—of car-wheels passing, car and truck wheels approaching head-on, of drivers leaning out and shouting, of hands pushing horn-buttons could, even in a silent picture, build up to a crescendo of visual impact such that you would almost literally seem to hear the blasts of the horns and the scream of brakes.

On the other hand, I would suggest using the American type of superimposed-image montage for occasions where you want to convey an impression of the lapse of time, or of bewilderment. For example, you might want to put over the idea that a character, out of a job, spends a long and weary time answering "help wanted" ads, with no success. You might begin showing him sitting on a park bench, reading the want-ads. Then cut to an extreme close-up insert of the head of the "Help Wanted" column. After this has been on the screen a moment, superimpose a close-up shot of his feet as he gets up from the bench and starts to walk; if you can, make this as a dolly-shot in which the feet, once the walk starts, keep walking continuously into the backward-moving camera. Hold this until the end of the montage. In other portions of the frame—above and to the left side—superimpose short, close shots (made preferably from a slanted-camera angle) of the man knocking at doors, ringing doorbells, passing under "Employment Office" signs, etc., while at the upper right you similarly superimpose close shots of stern-faced men—obviously employment managers and foremen—shaking their heads and obviously indicating no jobs are available. Through all this, you keep the background of the "Help Wanted" ad (it would be most effective if this could be treated as a slow-moving "roll-up" title) and the doggedly walking feet. In a comparatively few feet, this will tell the whole story of a dreary, days-long search for employment.

Professionally, of course, we would assemble these various elements by means of the optical printer. The amateur, however, can do it quite as effectively by multiple-exposure in either 16mm. or 8mm. For that matter, one of the most effective amateur montages I have ever seen was made in 8mm. by Past-President Bob Loscher of the Los Angeles 8mm. Club who, in his "Red Cloud Lives Again," which a few years ago won the Grand Prize in THE AMERICAN CINEMATOGRAPHER'S International Amateur Movie Contest, used triple and quadruple exposures to put over a raid by Indians on a pioneer wagon-train.

Having a wind-back fitting on your camera helps in making these multiple exposures, but it is by no means necessary, since you can always rewind the film in a darkroom or changing-bag, re-

thread the camera to a marked starting-point and then, with the lens capped, bring your film to the start of your superimposed exposure by paying careful attention to the footage-counter. In 8mm., of course, it's even simpler, since you can rewind the film by simply running the film through the camera with the lens capped until you have the film on the right spool and with your start-mark showing.

In making multiple exposures, the general rule is of course to split the exposure between the two or more takes, though sometimes you may want to give one take a bit fuller exposure to accentuate it.

Contrast is an important factor in making successful double-exposures. If both elements are of high contrast, they're likely to appear very mixed-up on the screen; if both are of flat contrast, the result is likely to be rather vague on the screen. The best results come if you can superimpose a fairly high-contrast "take" over one of lower contrast.

Also, the double-exposed elements should be rather simple. You can use a long-shot for an overall background if you wish, but for the superimposed elements which contain the key action, it's usually better to use close shots with simple action and backgrounds, and usually shots made from striking camera-angles. You can concentrate attention better on the action or face in such shots by using a plain black background; black velvet is excellent for this. For example, in the first example, in the first example I gave of an American-style superimposed montage, I would advise shooting the close-up of the machine-gunner against a black velvet background against which only his figure and the gun would show. This would give a background against which the other exposures of the montage would stand out more prominently.

If you want to confine some of the superimposed action to only a small area of the frame, you have several possible methods. If you have a camera like the Cine-Special, you can of course use the mattes that slide into the matte-slot in that camera, directly in front of the film. This, however, will give you a sharp matte-line. If you want a soft matte-line it is better to use a matte placed in front of your lens. If the matte is too far in front of the lens, it, too, will give a sharp matte-line, so bring it in to within a few inches, depending on the focal length of the lens used. For a soft, shadowy blend, use a matte with a deep-cut saw-tooth edge.

Using mattes in front of the lens, you will have to have some means of lining up your shot accurately. With a Cine-Special or one of the magazine cameras, you can do it through the ground-glass focusing finder, of course. With other cameras, you will usually have to rely on some sort of an alignment gauge by which you can move the finder over until it occupies exactly the spot the

lens occupies in shooting. This method, of course, is only as accurate as your finder.

The professionals have sometimes used another system for accurate lining-up on some types of trick-shots. They have a device which fits on top of a tripod and consists of a ground-glass and optical magnifying system, and a mount into which the actual lens which will be used to shoot the scene can be fitted, and is, of course, in exactly the same position in relation to the tripod as it will be when the lens is mounted on an actual camera. If you're mechanically inclined, it should not be too difficult to build up a similar gadget, using, perhaps, the bellows and focusing-screen of a second-hand vest-pocket plate camera, and a mount adapted to accept the lens of your cine-camera. A fairly strong reading-glass will magnify the ground-glass image for you.

At any rate, don't dodge making superimposed multiple-exposure montages simply because you haven't a camera with all the professional refinements of, say, a Cine-Special or a studio Mitchell. Some of the best multiple-exposure montages I've seen in 16mm. and 8mm. have been made with simple cameras. The really vital factors are care in execution, and mental ingenuity in planning the montage. And these qualities are by no means limited to professionals and the owners of de luxe cameras. END.

## Third Dimension Movies

(Continued from Page 363)

mounts are certainly easier on the audience!

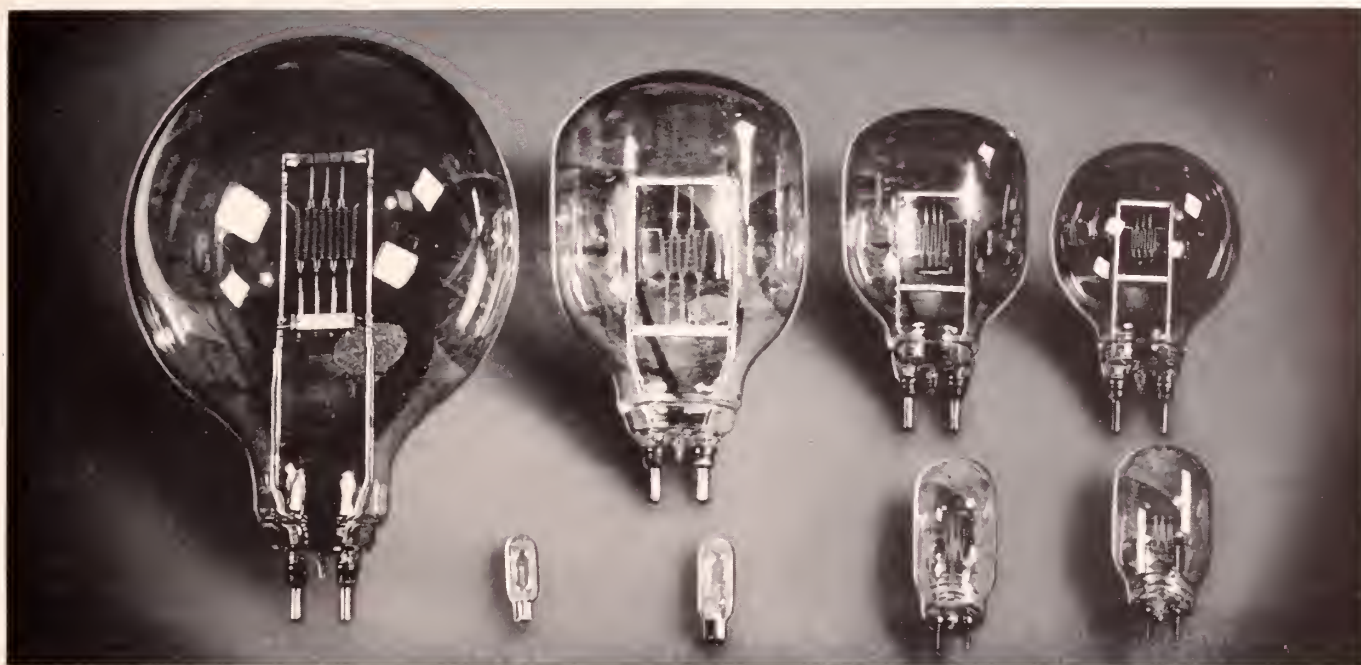
The polarizers in the spectacles should be mounted to polarize the same way as the pola-screens on the projectors; that is, the gelatins in the left-eye parts of the spectacles should polarize light the same way as the pola-screen on the left-hand projector, and the right-eye spectacles and the right projector's pola-screen should be matched to each other the same way.

It is vitally important that the right-hand and left-hand films should be kept separate from start to finish, and of course photographed, edited and projected "in sync." Since the cameras always start and stop together, and hold each other at the same speed, your scenes, as they come back from the processing laboratory, should be in sync. To check on it, mark the ends exactly, and then measure forward on each film to the beginning of the scene.

Editing is of course done in the usual way, with the exception that the scenes in the right-hand reel and the left-hand reel must match to the exact frame. When the editing job is complete, mark a starting frame on each reel's leader, so that both can be threaded into the projectors in synchronism and started absolutely together. Incidentally, remember that if one film breaks, when you repair it you'll also have to trim out



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movies can be a lot of fun if you plan your compositions with the effect of depth in mind. In long-shots, try always to have a natural frame of some sort, and preferably a figure or other object on the foreground, to heighten the illusion of depth. If you pick your angles right, you can get some startling effects, with trees and other objects in the immediate foreground apparently jumping right off the screen into the middle of the projection-room. And there are always the time-honored tricks of stereoscopy with which to startle your audience—having people apparently walk right off the screen into the room, extending a fishpole or something of the sort apparently over the heads of the audience, having a three-dimensional car apparently run off the screen and over the spectators, and so on. Three-dimensional titles, in which the letters seem to hang in the air several feet in front of the screen are another novelty, too. All told, if you try making third-dimensional movies, you'll certainly find plenty of ways of adding novelty to even the most commonplace pictures. Try it! END.

## Photography of the Month

(Continued from Page 355)

realism his camerawork and lightings give the production. Covering as it does the sixty-four year span from 1878 to the present, the picture gives its cameraman a continuous series of problems of lighting, especially that of keeping the lighting of the innumerable sequences in and about theatres from the gas-light period up to the present lit so each is visually in keeping with its period. Howe does this uncommonly well, at the same time enhancing the film's several strongly dramatic moments through effective visual treatment.

The many stage numbers are handled delightfully. So often, in sequences of this nature, the temptation in motion pictures is to splurge on something so impressive no stage could possibly house it. But in "Yankee Doodle Dandy" both the directors and cinematographer Howe have hewed to the line of strict realism—even to very stagey looking painted backings—to the very great advantage of the production as a whole.

It goes almost without saying that Jimmie Howe's photographic treatment of the players is excellent. Even in the sequences on supposedly gas-lit stages, he keeps them looking their best, yet without losing the necessary impression of realism.

The special-effects work of Byron Haskin, A.S.C., and Hans Koenekamp, A.S.C., is another feature of the picture which is well up to their usual high standard. And the montages by Don Siegel deserve a great deal of credit, as well.

## WAR EFFORT SHORT SUBJECTS

Produced for Victory by the Motion Picture Industry.

Recently the Industry's War Activities Committee held a special press showing of a representative cross-section of the many short subjects made, and in some instances distributed and exhibited, by the industry as an aid to the War Effort. Unfortunately, space does not permit a detailed review of these films; but we cannot avoid expressing a wish that this program could be roadshowed as a unit not only through this country, but throughout the United Nations. Not only would it convey a vital wartime message to millions of our fellow-citizens, but it would also show in tangible form something of what the motion picture industry is doing (often without profit) as its many-sided contribution to the fight for freedom.

Included in the program were films made for the U. S. Forest Service to bring home to the public the dangers of forest fires; "The Arm Behind the Army," a war-training film made for the Army, for exhibition to soldiers and to their un-uniformed fellows, the workers in the war production plants; "Divide and Conquer," a theatrical short-subject showing—to a considerable extent through captured Nazi propaganda film scenes—how France was softened by the Fifth Column. Another theatrical short was "Mr. Blabbermouth," an amusing but pointed cine-editorial on the wartime rumor-monger; "Parachute Athletes" was another theatrical film which showed something of a spectacular phase of military training. "Identifying the F-2-A (Brewster Buffalo)" was one of Walt Disney's unusual films on aircraft identification made for the U. S. Navy; "The Air Raid Warden" was another excellent theatrical-documentary, though marred by the technical error that the air raid warden called the fire department, which in an actual raid would be most unlikely. Finally, the Army training film "Combat Counter-Intelligence," one of 182 reels of training films already completed by the industry for the Army, proved to be a film which well deserves general theatrical release, and most particularly a civilian version, made along the same lines but devoted solely to the civilian's duty of "zipping his lip."

All told, the industry and everyone in it can well be proud of the achievement of which this evening's program represents only a limited cross-section.

## BEYOND THE BLUE HORIZON

Paramount Production (Technicolor).

Directors of Photography: William C. Mellor, A.S.C., and Charles P. Boyle, A.S.C.

Special Photographic Effects by Gordon Jennings, A.S.C.

Transparency Projection Scenes by Farciot Edouart, A.S.C.

In many ways "Beyond the Blue Horizon" (née "Malaya") is the most pictorially pleasing of Paramount's series of Technicolor exposures of Dorothy Lamour in a sarong. Directors of pho-

tography Billy Mellor and Charles Boyle employ their Technicolor cameras to very excellent advantage on both exteriors and interiors alike. It goes, of course, almost without saying, that the Technicolored appearance of the players is excellent.

Like its predecessors, "Beyond the Blue Horizon" aims definitely at pictorial effect, and achieves it in no small measure. Very probably the idealized version of a Malayan jungle is much more pictorial than the genuine article; it is certainly better lighted, anyhow. As a matter of fact, the production derives no small amount of technical interest from the very excellent way Mellor and Boyle have handled the tremendous problems of lighting convincingly the many extremely large jungle exteriors built inside a sound-stage.

Unlike some of the previous films of this series, "Beyond the Blue Horizon" does not make use of a hurricane or volcanic eruption for its climax, but that climax—a chase in the best manner—offers a noteworthy combination of skilled direction, cinematography, and special-effects and transparency process camerawork.

## SWEATER GIRL

Paramount Production.

Director of Photography: John Mescall, A.S.C.

This is another of those inherently unimportant Paramount program pictures which John Mescall's camerawork boosts to a production importance it probably doesn't merit. His compositions and lightings give it that altogether indescribable quality termed "A-picture appearance." The title, by the way, is misleading, for the picture is actually a surprisingly ingenious little murder-mystery.

This, of course, gives Mescall an excellent opportunity to create interesting effect-lightings, which he does with his usual skill. His work in the more straightforward sequences is also excellent, and he shows his players—the majority of them young enough to be an asset to any cameraman—off to excellent advantage. All told, for both photography and entertainment, "Sweater Girl" is well worth 77 minutes of anyone's spare time.

## I MARRIED AN ANGEL

Metro-Goldwyn-Mayer Production.

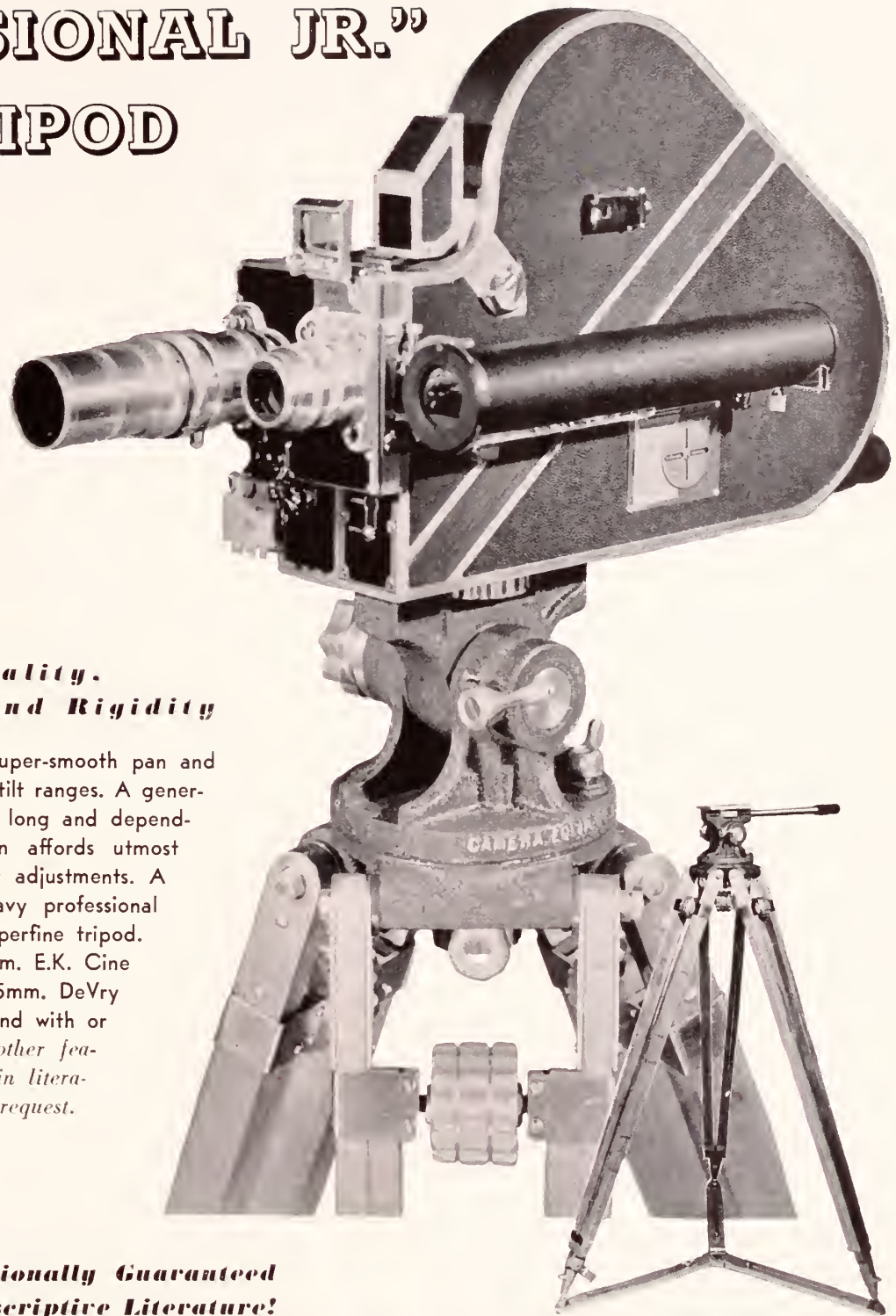
Director of Photography: Ray June, A.S.C.

Viewed from the strictly photographic angle, "I Married An Angel" is an excellent example of Ray June's customarily excellent camerawork. Viewed as entertainment, it's decidedly disappointing, for instead of the sly fantasy the story requires, it is brought to the screen with a heavy-handed treatment that is compromising all the time with literalness, and thereby misses the touch which would in the hands, say of a Lubitsch, have made "I Married an Angel" delightful. The montage which closes the



# "PROFESSIONAL JR."

## TRIPOD

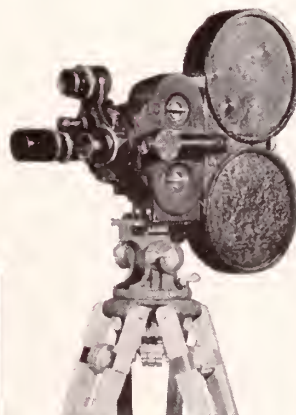


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**Left**—35mm Eyemo with motor and 400 ft. magazines mounted on "Professional Jr."

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dream sequence is a noteworthy example of this.

None the less, since the cinematographer's job is to photograph what is placed before his lens, Ray June has done an excellent job with the material that was given him. His compositions and lightings have all his characteristic deftness, though in some of them you get the feeling that perhaps he, too, was tired of the whole thing. He makes his players appear to really excellent advantage, though one close-up of Jeanette MacDonald in the costumer's-shop sequence should certainly have been removed.

The special effects work is commendable, especially that in the sequence in which Miss MacDonald makes her first entrance as an angel. The montage, on the other hand, was really disappointing, and makes one wish the very capable MGM special-effects staff had been given a freer hand with it.

## Underwater Movies

(Continued from Page 360)

lens-angles. Refraction tends to bend the focus away from your lens, so that if you should be able to measure the actual distance from your camera to the subject, and set the focus accordingly, you would find on the screen that your point of actual focus would be several feet behind the subject. For this reason, if you make movies under water, focus your camera at a point  $1/3$  closer than the actual subject-distance. For example, if your subject is actually 12 feet away, set your focus for 8 feet and the picture will be in perfect focus.

Refraction also narrows down your lens-angle considerably, so that an underwater scene made with the usual 25mm. lens looks on the screen as though it had been made with a 2-inch. The best way to get around this is to use a wide-angle lens if you have it (under water a 15mm. lens will give about the same angular coverage you'd expect from a 25mm. on land) and if you use a direct type of finder, match it to the narrower-angled lens.

Lighting underwater scenes is best if your light comes from a fairly high cross-light or  $3/4$ -front-light angle. The light should be direct sunlight, and quite strong, for while you can get a technically adequate underwater exposure on an overcast day, the resulting picture will be so flat and "muddy" that you'll find it useless.

Exposure-values under water are surprisingly good if you shoot in clear water and on a sunny day. If you have an opportunity to take an underwater reading with your meter, as is possible in working from a "hole in the water" or an observation-port in a swimming-pool, your meter-reading will be quite accurate if it is taken with the meter close to the glass of the port. If you can't do this, probably the best method is to make preliminary exposure-tests, and use these as a guide. The light underwater is often deceptive: it is likely to give you much more exposure

on your film than you would expect from visual estimate. Of course exposure-values will vary according to the clarity and depth of the water, but a safe starting-point for judging underwater exposures would be to begin by trying an exposure from two to three stops larger than you would use for the same film in the open air.

If you are shooting in a natural underwater location like a lake or river, try if possible to use a location where the bottom is of light-colored sand, as this will simplify your exposure-problems and reflect some light up into the shadows. If possible, shoot most of your shots either shoreward or with the camera pointed sideways along the shelving part of the beach. Shots made with the camera pointing straight out to deep water usually have a dark background, and nothing to give them depth or perspective.

There are two further points you'll have to guard against. One of these is reflection from the inner surface of the glass port through which you shoot. If you are shooting from a topless camera-tube, large or small, cover the top of the tube with black cloth, to kill reflections.

The other is the condensation of moisture on the cool glass of the port. If your camera-tube is open to the air, the air is likely to be pretty hot these summer months, while the water outside is likely to be cold. Moisture from the atmosphere will naturally condense on the inner surface of the glass window, which is cooled by the colder water outside. This will fog up your window, just the way your breath fogs the windshield of a closed car on a wintry day. Professionals often use a small electric fan to circulate the air and prevent this. Another method is to put some ice inside the camera-tube, to cool the air to a point nearer the temperature of the water outside. And there's another expedient—a familiar one to old-time motorists—which will help to some extent: just moisten a cloth with tobacco-juice and rub it on the inside of the glass. This will prevent the moisture from condensing in foggy droplets, and make it adhere as a thin, almost imperceptible film. END.

## Diopters

(Continued from Page 358)

made easily enough, but they're not so convenient; if you use strong lenses, aberrations will be introduced which will prevent getting a sharp image, while if you use weaker lenses, the image will be sharp, but the separation between them must be so large that you have a long tube which will cut into the field of any but very long-focus camera-lenses.

Here are the specifications with which to build a set of three of these distorting-lens systems which will give you a convenient range in power from 1.2 to 1.6, which should be enough for most requirements. For a magnification

of 1.2, use a plus 5 diopter lens and a minus 6 diopter lens, spaced 33.33mm. apart. For a magnification of 1.5, use a plus 8 D lens and a minus 12 D lens, spaced 41.67mm. apart. For a magnification of 1.66, use a plus 9 diopter lens and a minus 15 diopter lens, spaced 43.34mm. apart.

In this connection, the term "magnification" is used advisedly, for these cylinder-distortion systems produce the effect of distortion by magnifying the image in one plane or direction—either horizontal or vertical—and leaving the other virtually unchanged. The axis or direction of distortion is determined by the inclination of the axes of the two lens-cylinders of the distorting combination. If both axes are vertical, the image is distorted horizontally, and vice-versa. By revolving both units together, it should be possible to make the distortion change from horizontal to vertical during a scene, which can produce some very bizarre effects for nightmare or drunken scenes.—END.

## Back-Projection

(Continued from Page 357)

naturally record a lovely blank. The professionals get around this by having the two mechanisms interlocked either mechanically (as in the optical printer) or electrically, as in their back-projection process equipment. Unless you want to go to the trouble and expense of having synchronous electrical motors fitted to your camera and projector, this is out of the question. It's out "for duration," anyway, since there are other, more important uses for synchronous motors in wartime!

But we've found that you can lick this problem of synchronism by simply having the camera and projector operate at different speeds. There should be a differential of about 50%; otherwise, the two shutters may get out of sync at intervals: I've heard of one instance in which this trick was tried in 8mm. and the camera and projector got out of step precisely every sixth frame, producing an irritating black flash.

For silent pictures, we've had the projector running a bit faster than the camera—as close to 24-frame speed as we could reasonably make it, while the camera stayed at 16-frame speed. When taking the picture with a sound-camera—especially, of course, if adding sound to a silent picture—your camera will be running at 24 frames per second, so the projector should run at 16-frame speed.

We've found plenty of useful ways to put this idea of rephotographing pictures projected on a translucent screen to work for us. Among them may be mentioned making titles with moving backgrounds (or still backgrounds, for that matter); for enlarging a part of a scene to give a closer angle; securing additional footage of a scene; reversing action; adding sound to a silent picture through the use of a single-system sound-camera; and enlarging 8 to 16, or





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reducing 16 to 8, to say nothing of duping 16 to 16 or 8 to 8, or making a black-and-white dupe of a scene photographed in color.

To make titles with a moving background by this method, the first step is of course to select the background-shot that fits your need. Then you make your title by double-exposure. Use white letters on a dull-surfaced black card, or better, black velvet, for your first exposure. After photographing the lettering, rewind your film to the starting-point, which of course has been previously marked. If your camera has a wind-back on it, of course you can do it in the camera, with the lens capped. If you haven't a wind-back, you can do it in a darkroom or changing-bag. Either way, the next step is to photograph your background, as already described, by back-projection.

You can fade titles and background in and out with either a diaphragm fade or a fading-glass: and if you have an accurate mechanical wipe there's no reason why you couldn't make the title wipe in and out with the preceeding and following scenes. For that matter, if you have such a wipe, you could make scenes already photographed and processed wipe in and out by this method.

If you have a light-toned background-scene, you can get dark letters against this light background by simply putting cut-out letters on a sheet of glass placed in front of your screen. This way, you'll get the moving-background title at one take.

If you're skillful in lighting, you might be able to improve the whiteness and clarity of white-lettered titles double-exposed against a dark background by an extension of the same trick. Use white cut-out letters on a pane of glass in the titler, directly in front of a black background, and lit so that there's no reflection from the glass itself. Then—still keeping the glass with the cut-out letters in the identical position in the titler—rewind, and make your second exposure with no front-light, and only the projected image on the screen. The cut-out letters, remaining in the same position for the second take that they occupied in the first one, and being silhouetted against the screen, will serve as masks, and give an absolutely clear letter in your double-exposed title.

Duping 16mm. to 16mm., 8mm. to 8mm., or reducing or enlarging one to the other is simply a matter of straightforward projection and rephotographing, using, if you're enlarging or reducing, a camera of the proper size for the rephotographing. We've had surprisingly good luck "blowing up" 8mm. Kodachrome to 16mm. Kodachrome, in some instances—as in a recent experiment with some of the hula-dancing sequences Junior Past President Midge Caldwell brought home from Hawaii—adding sound to what was originally a silent 8mm. color-film. You'll get the best results in enlarging 8 to 16 if you use color, by the way, for in black-and-white there's quite a possibility that your en-

larged projection-dupe will be a bit grainy.

If you want to enlarge only a portion of the scene, making a long-shot into a closer angle, there are in theory two possible methods. You could bring the camera closer to the screen, so that its field only covers a portion of the projected picture, or you can move the projector closer to the screen while the camera remains stationary, and only that portion of the scene you want enlarged is embraced in the camera's field. This latter method is by far the best, for if you keep the size of the projected picture constant and move the camera in to cover only a small part of it, you'll also enlarge the image of the texture of the tracing-paper screen, which will produce a grainy effect.

If you mount the projector on a sliding carriage such as many filmers use to mount the camera for making "zoom" titles, you can, with a bit of practice, "dolly" a projected long-shot into a closer angle by sliding the projector in toward the screen, while you (or an assistant) "follow focus" with the projector's lens so that the projected image is constantly in focus. This requires plenty of rehearsal, and nice coordination, but the effect can be very useful, especially in scenario films.

To reverse action by this method of projection, all you have to do is run the projector backwards while you rephotograph them with the camera running forwards in the usual way. In this, it's a good idea to remember that with some projectors you'll have to readjust the speed, as many of them operate slower in reverse than when going forward.

To make a scene longer, you've got two possible methods, always presupposing that the action of the scene is such that there won't be a jump if you cut from the end back to the beginning for a footage-stretching repeat. If the original scene is comparatively short, you'll have to shoot its full length, then stop camera and projector while you rewind the projected film to the start of the scene, and shoot again. With this method, unless your camera is one of those that automatically stops with the shutter closed, you'll probably find fogged frames between each take in your dupe, which of course you'll have to cut out.

If, on the other hand, your scene is long enough, you can splice the ends together, making a continuous loop which can run through the projector continuously until you've gotten the desired footage in your copy.

This idea of back-projection can be used to represent the screen in a theatre, as we did in the Long Beach Cinema Club when filming our production, "Judge Doolittle." The scenario called for a theatre scene showing the proscenium arch and the screen, with a picture being projected on it. The proscenium arch (in miniature) was painted on cardboard and placed in the titler. The screen area was cut out, and a back-projection screen of tracing-paper put

in its place. A small lamp was used to light the proscenium and the scenes were back-projected as already described. These scenes of the theatre-screen were cut into the film with reverse-angle shots of the audience apparently looking at the screen, and the result was not only thoroughly convincing, but much better than if we had tried to photograph scenes projected on the screen of a real theatre.

All told, even though you've got to admit that we amateurs still can't do a lot of the back-projection and optical printer tricks the professionals use, there are certainly plenty that we *can* do by this back-projection method—tricks that will add a great deal to our home movies and the pleasure of making them! **END.**

## Indians Had a Word

(Continued from Page 351)

"mean" temperature. We never brought the cameras into a heated room. They would then immediately have fogged between the lenses, and it might have been weeks before they were clear again. We kept the film outside because warm film loaded into a cold camera—or vice versa—usually produces static marks. Static marks in Kodachrome are flaring color, like forked lightning, flashing in all directions across the frames.

Extreme cold weather makes film brittle, too. I've seen Kodachrome break off like wafers in the cameraman's fingers when he threaded the Cine-Special on a fifty below zero day. Indeed, whenever the temperature was lower than thirty-five below, he had to be particularly careful loading the magazines. Apparently care is the only precaution or remedy—zero weather is beyond human control, even that of a cameraman!

A doctor gave us his diagnosis of other film troubles likely to arise in the Arctic. He'd been stationed on Baffin Island, within the Arctic circle, and had used an 8mm. moving picture camera there. Baffin Island's direct communication with the outside world happened once a year, when the *S. S. Nascopie* arrived. Only then could the doctor send out his film for processing.

When he received his first year's shooting back the following year, his expression must momentarily have been as blank as much of his film permanently was. Either by standing in the cold, or in the cold and then the heat, or both, the emulsion had been ruined.

We heeded the good doctor's diagnosis and kept our exposed stock in one temperature as much as possible. Only when we knew it would be subject to temperature changes—as when it had to be shipped out on the weekly train—did we bring it progressively into warmer places: from outside shed to unheated room to heated room furthest away from stove, and finally into our living-room's alleged warmth.

For interior work we kept one camera—a Filmo 70—at room temperature. Whenever we moved it from our lodgings to any location, we swaddled it like



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a cherished infant within the bosoms of our parkas.

Lighting, of course, was a problem indoors in the North. Moose Factory's Hudson's Bay Post did have electricity; but the current came from a 32-volt Delco plant and was entirely inadequate for even a single photoflood. We had come prepared for this, however, and had batteries with us. We used two sets of three 45-volt dry cells, each set connected in series. With these we could run two No. 1's or one No. 2 photoflood for about twenty seconds at a time. This unit was adequate for foreground lighting of groups of one, two or even three people. We managed the background lighting with daylight.

We found that the bluish effect daylight will produce with Type-A Kodachrome could be offset if we did our shooting early in the morning or late in the afternoon when the sunlight which came through the large windows of the Hudson's Bay Post (where we were making our interior shots) was somewhat red. By using the batteries and the daylight, both intensified by as many tin-foil reflectors as we could mount at strategic positions, we were able to light up heated indoor areas adequately for Kodachrome.

But to do outdoor interiors—such as the tent on the trail—was almost an impossibility. Extreme cold affected our batteries to the point where they produced a current insufficient for even one No. 1 Photoflood. We did manage, by having the batteries next to the stove, and raising the back of the tent through which to photograph (so that the camera would be at outside temperature) to get one or two shots of the trapper eating his evening meal; but only because light in tents is known to be dim, did we feel we could use these few shots.

Outdoors on the daylight trail we might have had unsatisfactory results, too, if the cameraman hadn't been technically equal to the situation. He early learned that extreme cold contracted lens-setting rings so that they often refused to turn. Consequently—rather than attempt to force them—he waited until one day the temperature rose to around zero and then set each of the five lenses he had with him at a definite distance setting, which he had figured out would be the most practical one at which to leave the particular lens in question. His settings (calculated for maximum depth of focus) were:

1-inch lens at 25 ft.

2-inch lens at 4 ft.

3-inch lens at 50 ft.

105 mm. lens at 100 ft.

15 mm. lens (wide angle) at infinity.

Under shooting conditions, this meant changing lenses quite often; but the time entailed therein was nothing as compared to what would have happened if he'd tried to force setting-rings each time a different distance was required.

Only someone who has had to work under Northern winter conditions—and, further, has had to work with Kodachrome—can fully appreciate what the

cameraman accomplished in the trapping film. As the legal phrasing has it, "time was the essence" of our situation. For instance, the beaver season ended December 21st, and a beaver-trapping sequence was vital to our film. We were only able to make arrangements for our trip—fifty miles by dog-team—into the beaver country so that we arrived there December 19th. Consequently we had to work fast.

And then it began to snow!

With the film-speed of Kodachrome being what it was (and is), it began to look as if we wouldn't get any beaver sequence. We started from camp one gray morning for the beaver dam. We hoped against hope that the day would brighten; but it only began to snow harder. And the location at the dam was ideal! Still it snowed.

"I'm going to shoot. We've got to," the cameraman said after taking a meter-reading through the falling flakes.

"Try it," I said.

"Try and stop me!" came his muffled reply. He was already flat on his stomach, the camera tripod spreading its legs flat on the snow, too. I heard the sound of the motor as he began to shoot the trapper setting the beaver trap.

This beaver sequence, shot entirely in the snowstorm, has amazing color. The snow is pinkish; it looks downright warm; and the buff of the trapper's parka and the black-brown of the beaver stand out most effectively against it. We found that Kodachrome reacts violently and unpredictably to snow, and the final color on the film is never white, but purple, blue, green, or, as in the snowstorm, a warm and delusive pink. Snow in Kodachrome rarely looks really cold. But cold the snow was at James Bay; we can assure you of this! You'll see in the picture that it must have been, for, against the colored snow, the breaths of men and dogs stream in great clouds of frosty white.

As "Kam-musson-ab-ski-gay" we might pass into the Indian lore of James Bay, but our tradition will inevitably always be a pale one in the fabulous brilliance of him who went before us. *Robert Flaherty!* He used Moose Factory as one of his bases when he made "Nanook Of The North" some twenty-odd years ago. Indians have amazing memories and will tell you the detailed happenings of previous times as if they had occurred just the day before. George Carey, Flaherty's guide, was living at Moose Factory and spent one afternoon telling us about the "Nanook" expedition. George had not only acted as guide but also as interpreter. One of the Eskimos spoke Cree; and George spoke Cree to him and the Eskimo spoke Eskimo to the Belcher Islanders and it got translated back into Cree for George to retranslate into English for Flaherty.

Two ships Flaherty had; one he was forced to burn for fuel the winter he spent on the bleak treeless Belchers. One thousand pounds of tobacco he took with him for the natives—not only tobacco,

but rifles, knives, trinkets, goods of all sorts. A player-piano he had, and, of course, his violin. Even a monkey! If Flaherty had taken an elephant North, it could hardly have made a greater impression. Our own guide, who was a child at the time, still talked about that monkey!

Keeping whole Eskimo families through the winter for his cast, developing his own rushes in fifty-gallon tanks for which snow had to be melted to provide water, and projecting his rushes for the natives—these were things we were unable to even approximate. We were two—and he had been one: but the two of us together were quite obliterated by the very shadow of Flaherty which, after nearly a quarter of a century, still darkens all other movie work in the James Bay area. What were the few packages of cigarettes we distributed among the natives against his half ton of tobacco! What were our little 16mm. cameras, the results of which we couldn't even show the Indians, as compared with his immediate projection of the film he shot! But then, we can ask humbly, what is our little film, "Fur Country," compared with his immortal "Nanook?"

Indian memories may be reliable to the minutest point; but in their daily transactions the Indians themselves aren't. Perhaps I should qualify this statement considerably, and just call them so hopelessly casual.

The most casual experience we had was in connection with the seven dogs we'd managed to pick up to form a scrub team for our trip up the coast of James Bay. We returned to Moose Factory on Christmas day, and told the guide to keep the team together. We still had a number of connecting shots (for cutting purposes) to get of the team. We were willing to pay the owners the fifty cent rental per dog per day until such time as we should finish our shooting of the team.

That was fine.

The next day the guide appeared and said, "The owner of Oscar wants to be paid."

It was holiday time, and I couldn't think of Oscar's Indian owner going penniless at this particular season; so I advanced the \$6.00 which was coming to Oscar's owner.

The weather the next day or so was bad; but by the end of the month it had cleared. Our guide appeared with the sunshine and we told him to get the team ready just as quickly as he could.

An hour or so later the guide returned. Against the brightness of the day he brought dark news. Oscar was on the trail with his owner—!

"But when I paid you, you said Oscar's owner wouldn't take him away," I said.

"So did the owner," the guide replied.

There was nothing to say to that, but plenty to do. Oscar was the "prettiest" dog we had—a beautiful yellow husky. Furthermore, he'd been hitched nearest to the sleigh, which meant that in every



one of the many shots taken from the sleigh, Oscar was featured.

The cameraman took the most pessimistic outlook—everything was ruined now, just ruined.

"There are other dogs," the guide suggested in that accent that was so Scotch. From generations of association with the predominantly Scotch personnel of the Hudson's Bay Company, all the natives have this Scotch accent. The guide didn't say "dogs," he said "dough-ghs," dough like for bread with a hard "gh" sound almost imperceptibly blending at the end.

"Go and see if you can yet any dough-gh that even faintly resembles Oscar," was all I could say.

The guide was gone an hour or two. Whenever Indians get together conversation becomes endless. Silent the Red Man may be with the white, but with his fellows he's as garrulous as a gossiping granny in a small town or a night watchman in a city. But this time our guide had done more than talk. When he returned he took us outside. Tethered to the white pickets of the Hudson's Bay Company fences were dozens of dogs—all colors, all sizes, and, to save the day, among them one that was Oscar's nephew: a perfect double! In the finished film, we defy audiences to tell which is Uncle Oscar and which Uncle Oscar's brother's son!

Our faith in the vanishing Red Man, which had come so near vanishing itself, was renewed. We finished our shooting without further undue troubles during the first weeks of January. Then we returned to civilization to see our rushes. Either the cameraman's technical ability had been unusual (as I know it to be), or we had been unusually lucky (which we probably were, too), or both. Anyway our rushes were all we'd dared hope they'd be. We had won in the best and fullest meaning of the translation the "Kam-musson-ab-ski-gay" title — *those who have taken pictures!* END.

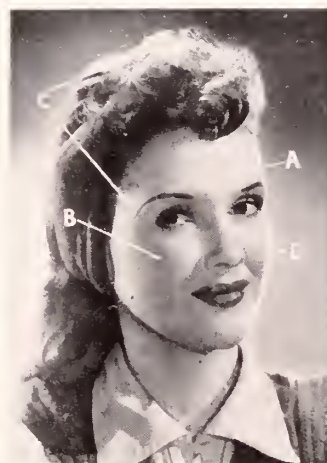
## Rudy Maté

(Continued from Page 352)

tell him I had never photographed a picture before! Besides, he never asked! Anyway, he didn't tell me he had never produced one! Back in 1921 I didn't know many producers, and the name Alexander Korda wouldn't have been any more—or less—familiar to me if he had been the biggest producer in Europe. We made that picture, and several others, together, and educated ourselves professionally in the process. We were just a couple of young fellows trying to get along in a business neither of us knew much about . . . but I'm sure neither of us dreamed we'd get along so far that twenty years later we'd work together in Hollywood, on a picture like "That Hamilton Woman!" which he produced and I photographed last year!"

Still seeking new worlds to conquer, Rudy went from Vienna to Berlin which was then, as it remained until the com-

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ing of Nazism killed it, the greatest production center in Europe. But Rudy never got a job in Berlin. Instead, he found in Berlin a producer who was looking for a cameraman to photograph a picture for him in Paris! So Rudy went to Paris, where he stayed for many years, photographing pictures for most of the French producers, both "major" and independent, including, Rudy comments wryly, "many Russian producers who probably hired me not so much because of my photographic ability, but

because I could speak Russian! The Russians, you know, are like the English and Americans in one respect: they may live and work in a foreign land, and speak the language fluently—but they prefer to speak their own whenever they can. So I spoke Russian—and worked!"

Probably the most notable of Maté's French-made productions was "The Passion of Joan of Arc," which has earned indisputable rank as one of the three all-time great films produced in Europe



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in the middle twenties, and together with "Variety," and "The Last Laugh" exerted a dominant influence on the artistic course of the cinema during the latter days of silent filming. "Variety" sensationally demonstrated the dramatic values of unusual camera-angles and the moving-camera technique. "The Last Laugh"—probably the only successful silent picture ever made completely without subtitles—carried silent-picture story-telling to its highest development. And "Joan of Arc" showed what could be done with dramatic close-ups, for the entire story was told—and told powerfully—in close-ups, seldom, if ever, employing even a waist-length figure. The extent to which the production depended on Maté's photodramatic artistry can well be imagined. Perhaps an even more striking example of what Maté's camera could mean to a picture occurred several years later in another French-made production—this time a sound-film—"The Vampire," which was acknowledged by press and public to be a success solely on the strength of Maté's exquisite camerawork!

But it is since he has come to this country that Rudy Maté has done his most outstanding work. Such pictures as "Dodsworth," "The Adventures of Marco Polo," "Foreign Correspondent," "Flame of New Orleans," "It Started With Eve," and most recently, "Pride of the Yankees," prove it. Generally speaking, European-trained cinematographers, when they come to Hollywood, have a slow and difficult time conditioning their minds and methods to American movie-making methods; some I have known have taken as much as a year and a half or two years before their Hollywood work was even remotely on a par with what they turned out in Europe. But Rudy Maté "clicked" in Hollywood almost from his first day's work, and has steadily built until his ability and reputation stand infinitely higher than when he came here, and when last winter Gregg Toland, A.S.C., went into active Naval service, leaving vacant what is generally regarded as Hollywood's top

camera job, it was not surprising that the astute Samuel Goldwyn should pick Rudy Maté to fill the vacancy.

As might be expected from his background, Rudy Maté approaches his work in a very studious fashion. He likes, wherever possible, to spend several days—more if possible—studying and analyzing a script before production starts, so that he can plan and carry through a definite photographic progression in his treatment of the scenes and sequences he photographs. To him, the dramatic climaxes of a picture are also photographic climaxes, and camerawork, as well as story and direction, should build progressively and smoothly to them.

He's no slavish follower of tradition, whether artistic or technical. "Sometimes," he says, "a scene may benefit by being handled in a more or less routine manner. But there are other times when you may get the best results if you go directly against the conventional rules! For instance, even the most elementary amateur textbooks on lighting say you should never light a person's face from underneath, except when you deliberately seek a weird effect. But in photographing 'Pride of the Yankees,' I found a definite necessity for breaking this rule.

"I lit most of Gary Cooper's scenes from below. I used a soft lighting, it is true, but it came predominantly from this angle we are taught never to use. That treatment, as I found from advance tests, 'ironed out' the natural wrinkles on Cooper's face, and made him appear much younger than his real age, as was dramatically necessary in most of the picture. Only in the later sequences, when he was portraying Lou Gehrig as an older man, and in failing health, did I light him from conventionally higher angles. The result was that he looked older in these scenes, and we got the dramatic effect we wanted very easily, and with a minimum of make-up. The camera in this instance definitely aided Cooper's fine characterization.

"The same thing holds true of my early study of the history of Art. It was about the only real preparation I had for a photographic career. But if I had deliberately tried to imitate the work of the painters I had studied, I am sure I would never have been at all successful. It is one thing to let yourself be influenced by what you can learn of the way these old masters approached the problems of composition and lighting: it is quite another thing to attempt to copy them directly on the screen. They had their medium, and you have yours; and any attempt at direct imitation would give you something which was certainly not a painting—and just as certainly not a real motion picture. But if you can translate their mental approach, and maybe their dramatic feeling, to your medium as you would translate something from one language to another, you will find your own artistic skill benefiting correspondingly."

END.

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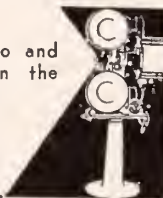
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## Lighting for Kodachrome

(Continued from Page 349)

fluencing the color-temperature of incandescent lamps is the voltage at which the lamps operate. It is a well-known fact that operating an incandescent lamp at less than its rated voltage will cause the light to be either yellowish or even reddish as compared to the same lamp's output at normal voltage. Likewise, operating a lamp at higher than the rated voltage will increase the color-temperature, making the light a more bluish white, and will also increase the quantity of light produced.

The makers of Photoflood lamps make use of this latter fact to gain increased performance from these lamps. Photoflood lamps were originally designed to operate at comparatively low voltages (about 60 or less, I believe) and to give about the same output and color-temperature as ordinary house lamps. But it was found that by operating these low-voltage lamps at about twice their regularly rated voltage, their light-output was increased to a sensational degree, and the color-temperature was also considerably increased.

Since these Photofloods had become the established medium for interior lighting of home movies by the time the Kodachrome process was introduced, it was only natural for the Eastman engineers to standardize on the Photoflood's color-temperature when a Kodachrome emulsion for interior use was evolved. The color-temperature of Photofloods, while much higher (whiter) than that of either ordinary household lamps or the standard Mazdas used in black-and-white studio cinematography, is still much lower—or redder—than that of daylight. In other words, the light of the Photoflood globe is deficient in its emission of blue and green light as compared to its emission of red and yellow, even though it is much bluer than standard Mazda light. Daylight Kodachrome, photographed under Photoflood lighting, would give an unnaturally ruddy cast to everything in the picture.

In the old two-color Technicolor process, this difference in color-temperature between natural and artificial light was compensated by using a different set of color-separating filters in the camera when photographing under artificial light. In the present three-film Technicolor process the compensation is made by using light (usually from arc sources) matched to the daylight standard.

Neither of these was practical for amateur use, so the Eastman chemists ingeniously made the necessary compensation by increasing the sensitivity of the blue- and green-sensitive layers of the "Type A" Kodachrome emulsion. The result is that "Type A" Kodachrome is color-balanced to Photoflood illumination, or its equivalent in color-temperature.

For interior lighting on a professional scale, especially in the studio, lighting with Photoflood globes in the small flood-

lighting units made for amateur use would be at the least inconvenient. But fortunately there are globes available which produce light of approximately Photoflood color-temperature, but are made in sizes and types which will fit into standard studio lighting units. The Seniors, Juniors, Baby-Juniors, Broads, strips, Kegs, etc., of Mole-Richardson and Bardwell-McAlister, with which most studios are equipped, are adaptable to Kodachrome production by merely replacing the regular Mazda globes with the so-called "CP" globes, which burn at almost exactly the same color-temperature as Photofloods.

These "CP" globes are the same ones as used for Technicolor interiors; but there is a very important difference in the way they are used for Technicolor and the way they are used for Kodachrome. For Technicolor, these globes, which burn at a color-temperature of 3380 K, are always used with a special "daylight blue" filter which, by suppressing most of the red radiation, raises the color-temperature to a figure above 5300 K, so that these lamps effectively match the Technicolor daylight standard. *But when used for Kodachrome with the "Type A" emulsion, no filter need be used, since the film itself is balanced to match the color of unfiltered Photoflood and CP globes.*

The same thing applies to the use of the arc lamps generally employed in Technicolor lighting. Since these lamps are engineered to match the color-tem-

perature of normal daylight, their light will be much too blue for Type A Kodachrome, though it would be perfect for use with the regular or "daylight" Kodachrome.

The standard Mazda lamps normally used for black-and-white, as has already been mentioned, burn at a color-temperature too low to give satisfactory results with the Type A emulsion. They will give much the same effect as a "raw"

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inkie in Technicolor—a reddish tone which may at times be useful for special firelight and lamplight effects in back-grounds, but which is not pleasing on people, or desirable for overall lighting. It may at times be confusing when one sees still photographers making successful Kodachromes with this lighting, but it must be remembered that for professional still photography in Kodachrome a special emulsion, known as "Type B," is made, which is balanced to the 3200 K color-temperature of standard Maz-das. "Type B" is not available as a motion picture film.

In addition to the Photofloods—No. 1, 2, and 4—and the "CP" professional globes ranging up to 10KW sizes, there is another globe of high color-temperature which is also suitable for Kodachrome use. This is known as the "Movieflood." It is essentially an over-sized Photoflood-type globe of 2,000 Watts output, with a PS-52 globe and a mogul screw base. It is available in either clear or inside-frosted globes, and burns at a color-temperature very slightly higher than that of the Photoflood and "CP" globes—3,400 K instead of 3,380 K.

The Movieflood, together with the three types of Photoflood, is especially valuable in making interiors on location, as in factories, etc., since these lamps (especially the Movieflood) deliver a large amount of light at a minimum consumption of current, and may be used in a variety of reflectors, including some types which were made specifically for such portable use.

The most striking difference between black-and-white and Kodachrome lighting is the great quantity of light required for adequate color exposure. In lighting interiors of average size for long or medium shots it is almost impossible to get too much light for Kodachrome exposure. Probably the most likely cause of poor color reproduction in such scenes is lack of sufficient light in all parts of the scene. Each important part of a scene must have its own lighting unit supplying in itself almost enough light for exposure without taking into consideration any spill-light from other units and areas. Every corner, every surface, every area must be strongly "painted" with light if its true color is to show in the Kodachrome reproduction. It is an advantage to be able to use many small units to dis-

tribute the light uniformly over the scene, rather than to depend on a smaller number of larger units.

Because of the intensity of light required and the heat generated, it is a good policy in making professional studio interiors in Kodachrome to have the equipment set up so that the Photoflood, Movieflood or "CP" lamps can be operated at about ½ rated voltage during lining up and rehearsals. This method saves current, adds noticeably to the life of the lamps, and makes working conditions on the set much more comfortable.

The simplest way to accomplish this is to connect two similar-sized lamps to a switch which in one position connects them in series, and in the other position, in parallel. Another method is to have a rheostat on each lamp, or to wire groups of lamps on a good-sized dimmer-bank, so that except when actually shooting, the voltage may be reduced.

Incidentally, it should be stressed that in Kodachrome production, exactly as is the case in Technicolor, the dimming rheostats which are used so extensively in black-and-white cannot be used, since in addition to altering the intensity of light, they also reduce the color-temperature.

Maintaining correct voltage in lamps is important in black-and-white, but it is very much more so in Kodachrome. It is probably more important for the professional cinematographer or gaffer to continually check the voltage and color-temperature of his interior illumination than it is to check on color-temperature in making daylight exteriors. When the electrical load required for adequate Kodachrome exposure is placed on even a studio line, some drop in voltage is almost certain to result, and it may even be sufficient to adversely affect the color-balance of the scene. This is especially the case when the stage is on the far end of a long power-line, in which there would be a noticeable voltage-drop anyway.

This is almost certain to happen in lighting location interiors unless the producer is able to supply rated voltage either from his own portable generators or by a direct cut-in on an ample power-line. An accurate voltmeter for checking line voltage at the lamps for Kodachrome production is almost as important an accessory as an accurate exposure-meter. If the voltage is low and cannot be raised, then a certain amount of color-temperature compensation by means of filters may be used, though of course at the cost of having to increase exposure to offset filter-absorption. Here again a color-temperature meter is valuable in the hands of an experienced operator.

Second in importance to voltage in determining the color-temperature of lamps used for Kodachrome lighting is the age of the lamp. Generally, the color-temperature of a new lamp will be slightly higher than its rated value, and its color-temperature decreases with age to a value below its rated efficiency by the time it gets near the end of its

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useful life. This is especially true of the over-voltaged Photoflood-type lamps. In production on a professional scale it may be economically worthwhile to keep a record of the number of hours a lamp is used and to discard it before it is actually burned out, because of its change in color-temperature. As mentioned previously, lamp life—and with it color-temperature efficiency—can be greatly extended by burning lamps at lower than rated voltage except when actually shooting.

It is very important to avoid mixing light of different color-temperatures when shooting in Kodachrome. Mixing light is almost bound to occur in shooting location interiors where a large amount of window or sky-light illumination is present. Professionally satisfactory color reproduction cannot be obtained under such conditions, but there are fortunately some ways this can be offset.

One way is to photograph location interiors by night, with only Photoflood or similarly correct illumination, with of course no embarrassingly blue daylight illumination coming in from the outside. Another is to minimize the amount of daylight entering the scene by drawing curtains, shades or venetian blinds when this is possible. Still another solution is to cover all the windows or skylights contributing to the scene with a pinkish gelatin filter—or even paint—which will tend to filter out the excessive blue and green of daylight and make it more nearly match the color-temperature of the Photofloods.

Yet another solution is to use daylight Kodachrome for such interiors, and light with daylight-corrected Technicolor-type arcs or *filtered* "CP" incandescents. A variation of this is to use daylight Kodachrome and light with the blue-bulb "daylight" Photofloods. However, this method is not as likely to give professional results as some of the others because the color-temperature of these so-called "daylight" Photofloods is actually considerably below that of real daylight, and the mixture will give a slightly yellow-toned picture with the bluer daylight evident wherever it strikes.

Although filters are available for adapting "daylight" Kodachrome for use with Photoflood illumination, and for using "Type A" Kodachrome in daylight, neither of these methods is satisfactory for professional production use. The color reproduction possible when using "daylight" Kodachrome in daylight is far superior to that obtainable with filtered "Type A," and likewise "Type A" Kodachrome used with Photoflood or "CP" duction than is possible with "daylight" Kodachrome and a filter. In addition, the latter filter greatly decreases film-speed under conditions where all possible speed is required. If it were possible to make one film which would be equally satisfactory in either daylight or artificial light, and could be controlled by the mere addition of filters, we may be sure the Eastman experts

would not have complicated their film-making problems by making two different emulsions. For truly professional results each Kodachrome emulsion should be used under the conditions for which it was made. (To be continued.)

## Industrial Training Films

(Continued from Page 347)

action of the gases released in the operation.

It is hardly to be wondered, then, that General Electric, once having seen the first of these pictures, insisted on obtaining exclusive rights to distribute the entire series of six, which are now playing an important part in training skilled welders for the war effort.

At the other end of the country, in New York, Emerson Yorke has brought a similar new slant to the production of eight reels of technical training films for the U. S. Office of Education. These pictures were designed to speed the training of the overalled army of machine-tool operators so urgently needed in our War Industries, and they, too, imposed technical problems which called for a completely new method of photographing and presenting some of the key scenes.

It is easy enough, for instance, to show the basic operations of a lathe, for the operations generally take place on the outside of the metal being worked. But when holes are being drilled in a piece of metal, or a tap being used to cut a thread inside a hole, the problem is entirely different, because the vital action is taking place *inside* the block of metal being worked. The conventional method of showing operations like this has been to use line animation, supported, perhaps, by a cross-section breakdown. But this is not always satisfactory, for in the one instance, it shows what is, in theory, *believed to happen*, and in the other, something that *has happened*, rather than what *is actually happening*. In other words, there is too much theory, and too little actual proof.

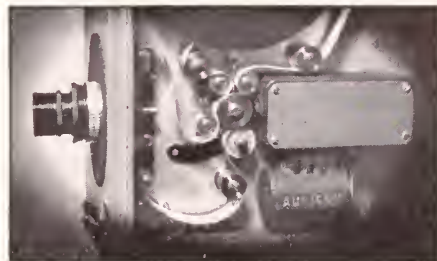
To meet this challenge, Director Yorke and Cinematographer Edward Hyland made use of modern materials which permitted them to show the action in a clearer and more modern way. Many plastics can be turned, drilled and tapped in exactly the same way as metal: and some of these plastics are translucent. One of the latest of these—lucite—is almost perfectly transparent. So Yorke and Hyland substituted lucite for metal in these scenes which dealt with operations inside the metal.

The resulting shots show in almost perfect detail the actual action of a drill or tap inside the lucite, exactly as it would happen inside a block of steel. Close-ups shot from various angles show not only how the tap or drill works, but how binding action can be caused by an improper accumulation of chips, and so on.

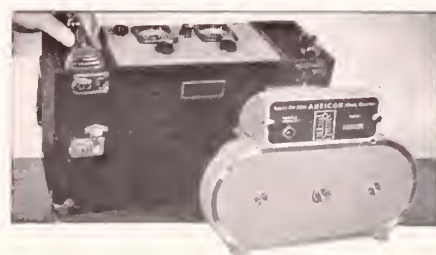
Another problem cinematographers have always faced in making films of

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this nature is that of stroboscopic action when photographing revolving parts, such as the bit of a drill, or a piece of metal turning in a lathe. Sometimes this phenomenon makes the revolving object seem to stand still; at other times, it may apparently reverse its motion, according to the way the movements of the drill and of the camera-shutter happen to synchronize. For instructional purposes, this is a distinct liability.

Yorke and Hyland solved this problem by making the stroboscopic action work *for* them, rather than *against* them. They planned the distribution of lighting for these scenes not only as to area, in the usual photographic-lighting sense, but as to timing. While for rather obvious reasons, they have not cared to disclose the precise details of their method, it can be assumed that they utilized something very similar to the principles pioneered by Edgerton in his stroboscopic super-high-speed movies (seen commercially in the MGM Pete Smith short, "Quicker'n' a Wink") and lit at least the revolving bit of the drill with intense flashes of light, carefully timed to synchronize not only with the camera's shutter, but with the speed at which the drill revolved. In this way, each successive frame-exposure would show the drill slightly ahead of its position in the previous frame, rather than in perhaps the same apparent position, or advanced just less than a complete revolution so that it appeared to be behind the position in the first frame. Thus, the drill would move naturally on the screen.

It is not difficult to foresee an even greater surge toward the use of motion pictures—logically in direct-16mm.—for "how-to-do-it-better" instruction among our civilian defense industries as pictures of the type and calibre of those just mentioned get into more general use. And that is the cue for the commercial producer who is not yet making films that contribute to the War Effort to swing into action. From the film-selling angle, it should not be so hard to convince many a potential sponsor who in pre-war days might have balked at the idea of a motion picture to help him secure orders for his product that now that he has the orders, a film showing the proper and most efficient use of his product would be beneficial in two ways. Not only would it serve the immediate patriotic purpose of speeding the herculean task of training our vast new army of machine-shop soldiers,

but it would help cement his firm and product in the minds of the foremen of today who may well be the superintendents and purchasing agents of a post-war tomorrow. Such pictures are in truth double-barreled ammunition for the battle of production.

But if they are to be, they must not be approached by the technicians, directors and story-creators who make them in a routine spirit of "let's-make-them-this-way-because-they've-always-been-made-that-way." These films, and many others for wider distribution on such subjects as civilian defense, first aid, salvage of scrap, and conservation of resources, will constantly present to their makers new problems in technique and presentation. These problems can no more be solved in routine methods than were those already described. But if the makers and technicians of 16mm. business-films see in them a challenge to the ingenuity of which they've so long boasted, out of this emergency will come new technical ideas, and new ideas of presentation. With them, these films will not only do a powerful bit to aid in winning the war, but can also serve as a practical proving-ground for ideas which may well revolutionize the making of business and instructional films for years to come.

The purchasers of these films are here, for war contractors and their suppliers and sub-contractors clearly recognize the need for effective instruction of employees. The audience is here and enthusiastic, for the hundreds of thousands of new employees in our war factories recognize their greenness, and are ready to accept anything that will help them do their work better.

It is up to the makers of business films to say if the films are to be here, too. The mechanism for producing them in the necessary quantity and variety already exists among the business-film studios scattered from coast to coast. The need is here—now. So is the opportunity! **END.**

**Cartooning**

(Continued from Page 346)

when on the scoring stage is provided with an earphone over which he hears an intermittent high-frequency note indicating the exact tempo. In the case of a free-beat, or indefinite tempo, a "beat loop" is prepared by the cutting department. This is simply a length of blank leader film with holes punched at the side ordinarily occupied by the sound track. These punch holes are spaced according to the lengths apart of the musical accents, at so many feet or frames. The film is spliced in the form of a loop, so it can be run over and over again on a playback machine up in the projection booth and "piped" through to the earphones of the musicians. They listen to this loop a few times to get used to the timing before attempting a "take." Each of the earphone beats corresponds to a measure of music, and it's just a matter

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of following the beats along with the score.

Recorded music, like everything else along the cartoon production line must be checked, passed upon and okayed. Retakes of music are rare, unless something goes haywire during the developing of the negative. Overall balance and harmony are checked upon during the recording session by acetate disc playbacks which are made while the film recording is taken.

Up to this point, all of the noises that form a part of the final sound-track of the finished picture have been kept separated from each other on different reels. Dialog is on one, and the sound-effects might be on one more, or two, depending on their number of complexity. Music is on a track by itself. All of these tracks are on reels, each as long as the picture. They may be made up for the most part of blank leader, with the strip of film that is the dialog or sound-effect take cut in at the proper point to synchronize with the picture.

These multiple tracks are a necessity, as no two sounds can occupy the same spot on one track at once, unless they're dubbed. But up until the dubbing, or re-recording, they have to be kept on separate tracks. On one track there is music. On a couple of more tracks might be two pieces of dialog going on simultaneously. And there also might be a couple of sound-effects filling in the noise background. At the final re-recording session, all of these sounds must be fused into one track, each in the proper balance with the other. Neither sound-effects or music, for example, should drown out the dialog. Then again, a certain sound-effect might have to be dialled up to provide a sudden accent. These, and other similar considerations, are taken care of at the re-recording session.

Each of the separate sound-tracks is run on a playback machine, or film phonograph, in sync with the picture reel. At Disney's, the re-recording is done in the studio theater, under ideal acoustical conditions. The sound emanates from the screen speakers, and the sound-men concerned with re-recording can judge levels and balances under perfect theater conditions. Halfway down among the seats is situated a control-board, with individual dials governing each playback machine up in the projection booth. Each sound-man handles a couple of tracks, judging the proper sound balance by alternately watching the screen and a "score sheet" on which is indicated the positions and volume-levels of all the sounds in relation to the picture.

The picture is run through and through several times, all tracks going full blast, until the sound-men gradually learn what sounds to pull down and which ones to give a little more "gain." Within a few frames, music might be required to drop down to a third of the volume at which it had been running. At another strategic point, where Bambi might take a running jump and flop across a log, the music and sound-effect syncing with the flop would be dialled

up suddenly to accent with the action. Many rehearsals are necessary before the men at the dials become accustomed to coping with all these required changes in volume.

Finally, when all of the music, dialog and sound-effects are presented in proper balance through the screen speakers and everyone performs his dialling in perfect coordination, a "take" is made. The picture and tracks are run again, the sound-men at the dials go through their routines, and the sound, as re-adjusted by their dialling, is piped through a separate channel into a sound recorder and onto film. If someone misses a cue and fails to dial a sound up or down at a crucial spot, a new take must be made. Otherwise, they "wrap it up," and order a print.

But the picture and sound aren't wedded together yet. Comes now a preview, with all the consequent possibilities of further cutting. So, at the preview theater, the silent color work-print is run with the newly dubbed track, using two electrically interlocked projectors, one for the picture and the other for the separate sound-film. Of course, on the screen, the effect is just the same as of a completed release-print.

If the preview audience laughs in the wrong places, if there are slow spots, if certain gags fail to get over—all this means work for the cutting department. The bad spots are trimmed out, and then if it's the general consensus of opinion that no more can be done to the picture, the picture and sound-track negatives, freshly cut, are bundled off to Technicolor to be finally joined together.

From here, the couple-hundred release prints start their journey through thousands of projectors, running the gamut from first-runs to jerkwater grind-houses years later, and eventually earning a well-deserved rest in some film vault. And during all this time, the process just outlined is being repeated over and over again, in varying degrees. With the proper spirit of improvement present, each resulting picture should be just a little better in some way than its predecessor. Most of those improvements are along technical lines, for they are tangible somethings that can be seen, compared, and felt. These elements are animation, drawing in general, layouts,

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Ideas, gags, and conceptions, being of the mind and consequently as intangible as any thoughts, are always slow to catch up with technical improvements. However, abuses of the animated cartoon medium by bad conceptions and irrelevant material are gradually becoming fewer and fewer. Those responsible for the creative development of the cartoon are learning what sort of material is best suited to the scope of the cartoon, and what is not. Of course, these lessons were all learned by bitter experience—by “trying out” something, seeing the fallacy of its conception, and from there steering clear of similar mind-wanderings in the future. Many of these painful experiences resulted from attempting to do what the live-action camera could have done a lot better.

One indeterminate factor, however, which will always retain a semblance of uncertainty, is audience appreciation. Years of experience in producing cartoons have shown pretty well what the average audience is likely to laugh at and what it won't. But unfortunately, all audiences aren't average. The studio crowd will get a kick out of something that wouldn't faze the phiz of a retired farmer. Swing-shifters have different slants on things than do Ladies' Aid Societies.

But luckily, the animated cartoon, in its present-day development, has more to offer than just laughter. Amusement is not the only sign of enjoyment. With improvements in cartoon technique, it can be found that color, music, movement, and characterization are just as important as humor in purveying entertainment. A beautiful scene is every bit as entertaining to some people as a belly-laugh is to others. The animated cartoon is an unparalleled position to exploit these new fields of enjoyment. A new field of tremendous possibilities is also being opened up by the wartime use of animated cartoons to instruct—turning hitherto uninteresting, academic subjects into lively, instructive pieces of entertainment.

It remains for much more to be written and spoken regarding the unlimited future of the animated cartoon, but it's enough to say now that no one is more completely cognizant of this future than the man responsible for the high place now occupied by the cartoon—Walt Disney. And it's quite liable to be found in the very near future that this new medium of entertainment and instruction will have outgrown the title “cartoon” as much as modern live-action motion pictures have graduated out of the class of “flickers.” END.

### “Pre-Photographing”

(Continued from Page 343)

of them, like the recently-introduced “Auricon” single-system camera, produce sound that is entirely adequate for purposes like this, yet are available at a cost very little greater than that of the better silent 16mm. cameras with which several of our studios are already equipped.

Sixteen millimetre sound-projectors are available in ample variety to make this “pre-production” system very flexible. The powerful arc projectors already used in several studios for screening silent 16mm. tests need only the addition of sound pick-ups and amplifiers to permit the screening of these 16mm. sound-films in the largest studio projection-rooms. Some of the smaller 16mm. projectors already in use in the studios could also be equipped with sound, and used for studying the picture in smaller rooms, such as offices, directors' and producers' homes, and the like. Finally, 16mm. Moviolas and—perhaps still better—extremely small, portable sound-projectors with a self-contained screen and speaker, like the “Movie-Mite,” are available and could be kept right on the set so that director, cinematographer and players could study the “pre-photographed” scenes on the set as they prepared to film the final, 35mm. version of the same scene.

The choice of film is a debatable question. From the viewpoint of economy in both film-cost and lighting, black-and-white reversal films comparable to the Plus-X and Super-XX negative customarily used in 35mm. offer considerable advantages. On the other hand, for Technicolor productions, Kodachrome might in some ways be advisable, while even for “pre-photographing” black-and-white productions Kodachrome would offer the potential advantage that even if it requires considerably more illumination, and costs rather more than 16mm. black-and-white, the grainless structure

of the Kodachrome image is such that if—as might occasionally happen—some player should hit an emotional peak in the 16mm. test take of a scene, and could not recapture it in the later, 35mm. filming, the 16mm. take could be enlarged to use in the 35mm. release with at least adequate results.

All told, it would seem that this idea of “pre-photographing” productions in 16mm. offers many advantages, and few disadvantages. There's an old saying that it's worthwhile to “throw a sprat to catch a herring,” and it seems to me that since this system offers, at the negligible cost of a few thousand feet of 16mm. film (each foot of which uses but half as much celluloid as a foot of 35mm. film, and gives 2½ times as much screen time per foot) and a few days' additional shooting, a chance to reduce consumption of 35mm. film to a hitherto-unheard-of degree, it is well worth a trial. In addition, “pre-photographing” a picture in 16mm. offers the added advantage of being able to make your 35mm. production, so to speak, after you've already made and previewed it—something for which we've all wished at times.

With these immediate advantages offered, does it not seem possible that the idea of “pre-photographing” our pictures in 16mm. is well worth trying, not only as a means of realizing our immediate, patriotic objective of conserving film and materials, but also as a potentially very valuable aid in our perpetual effort to make better pictures, more efficiently? END.

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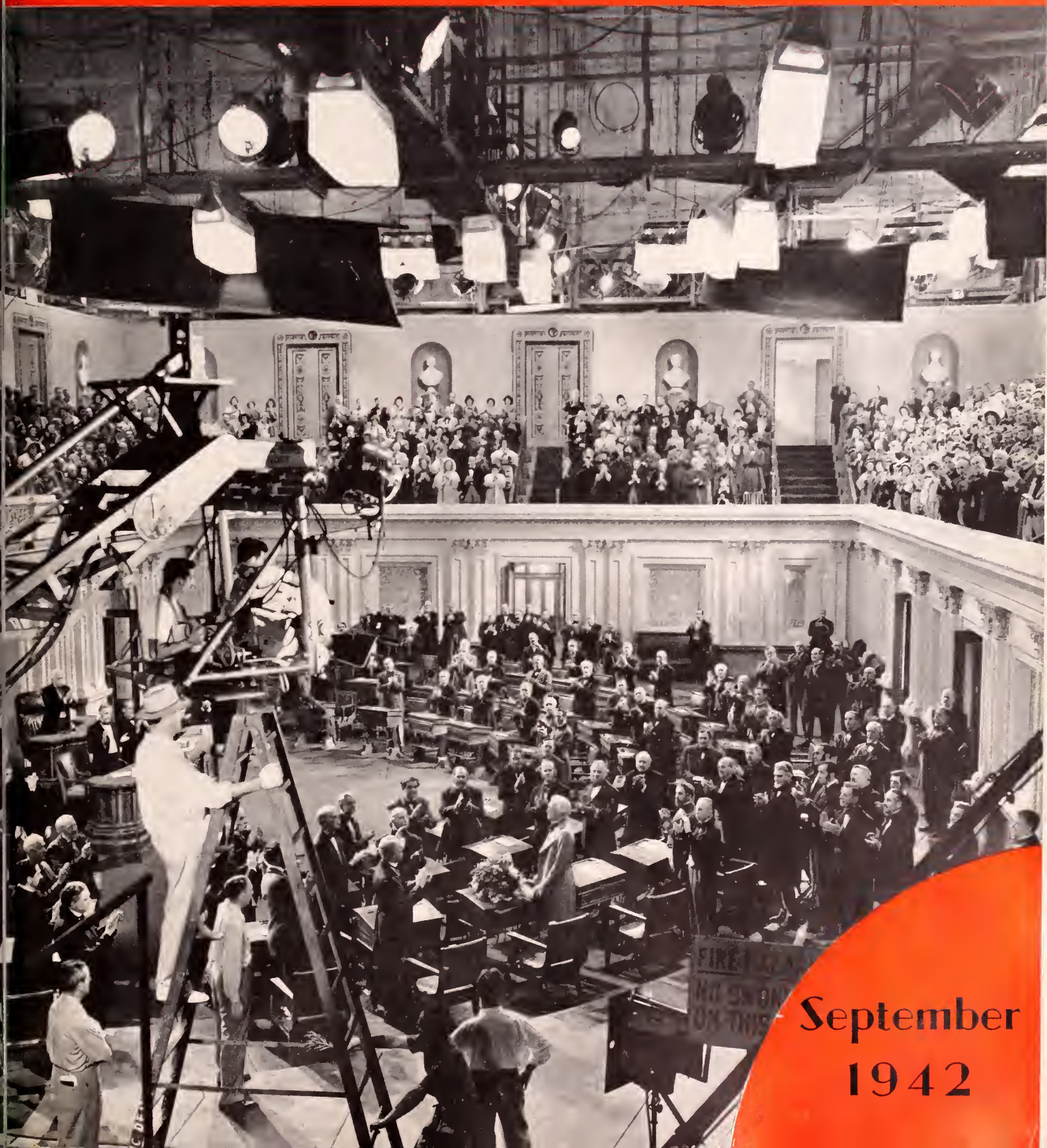
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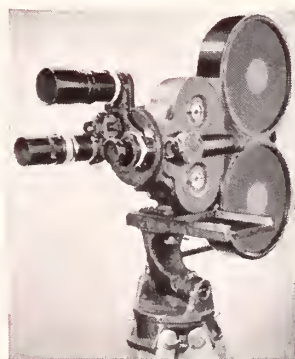
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# AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 23

SEPTEMBER, 1942

NO. 9

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### The Front Cover

This month's cover shows Hal Rosson, A.S.C. (in white shirt at right of ladder), making a scene from MGM's "The Man On America's Conscience." Note underslung mounting of camera on boom to permit sharp downward angle, and characteristic MGM geared tilthead. Photo by Gene Richee.

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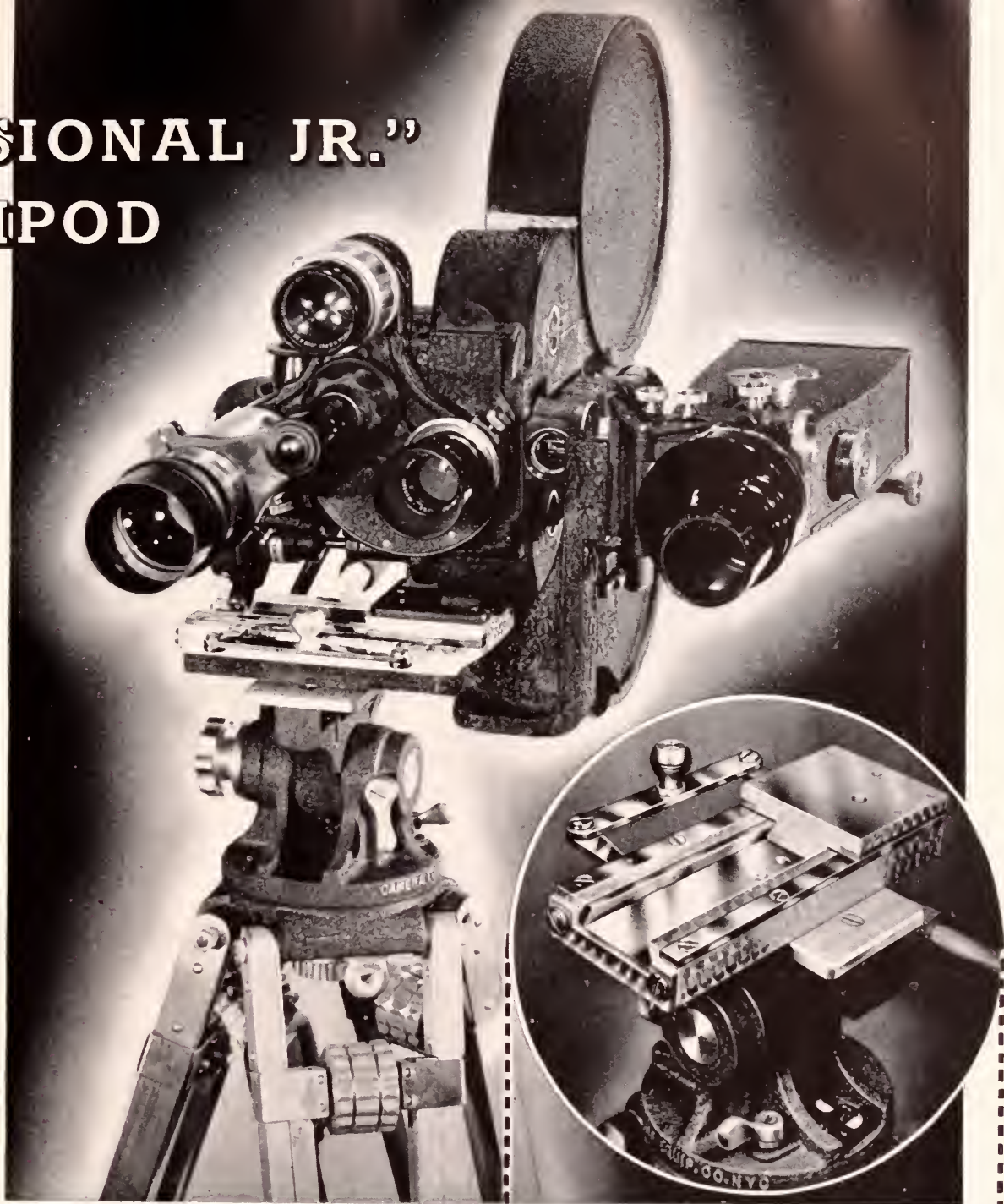
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In this scene from "They Got Me Covered" a real gas-works provided a huge set that could not be built under modern restrictions—and the real thing proved more realistic than a set would have been.

wonder why they don't just take a smaller flat and get married on the savings! The hero's flat may have all the threadbare furniture and shoddy decorations you'd expect to find in the quarters of an \$18-a-week Bunker Bean—but there will be room enough, too, for a dozen people to move around in without being crowded. Nine times out of ten the heroine's apartment will be a model of modern design—the sort any actual apartment-owner would figure at a rental of about \$300 a month!

In all of this, we've probably captured the line and form of the room excellently, but then we've unconsciously distorted it by adding space "for the camera." We've known that in actuality such-and-such a room would be about, say, 9x12 feet in size. But then we've checked ourselves with the thought that in this scene, the camera must dolly, while in that scene, and that one, and *that*, we have to make a better-than-factual long-shot. So to be on the

## MORE REALISM FROM "RATIONED" SETS?

By PERRY FERGUSON

SOME philosopher once remarked that one of the main differences between a limitation and an opportunity is the viewpoint from which you look at it. In other words, many a thing that seems like a severe restriction may be turned into an advantage if we only look at it from the right viewpoint.

Today's wartime restrictions, which put an arbitrary "ceiling" of \$5,000 worth of new material per picture on our set-construction may perhaps turn out to be in that category. There's no denying it hurts—especially in studios which, like the Samuel Goldwyn Studio with which I am associated, have a rather limited production schedule exclusively of high-budget pictures, and have never turned out "B's", for which art directors in other studios have habitually saved and revamped a continually growing collection of stock sets. It will certainly mean that a lot of scenes will be written out of scripts because we can't construct the necessary sets for them. It will probably mean the shelving of certain stories for the same reason. It will mean doing without a lot of things which we as designers and users of sets have become accustomed, and the development of a whole new system of "ersatz" materials and methods of set-construction.

But isn't it possible that in spite of the inconveniences these necessary restrictions impose, we may find some unexpected advantages? I think so; all of us have recognized (and perhaps complained about) abuses in set-design

which can honestly be traced to the fact that we could opulently build almost anything we wanted to. Now that we can't, maybe those abuses will have to be corrected!

For example, many of us in the industry—cinematographers, directors, producers, writers, players and even art-directors (to say nothing of the general public)—have at one time or another complained that except where the designer may be copying some actual or historical building, sets are likely to have all too little connection with the reality of what they represent.

The classic example, of course, is the movie night-club. Personally, I have yet to see a real night-club which isn't cramped enough to make one wonder if the human race isn't descended from the sardines, rather than from the simians. But a movie night-club generally sprawls over the whole of the studio's biggest sound-stages, and has plenty of room to dolly the camera everywhere between the tables—and even for the hero to dance without bumping into the dress extras on the dance-floor!

But I think an even better example is the average movie apartment. We carefully plant our hero as a poor but honest steel-mill worker, or our heroine as an equally poor and honest stenographer—poor enough, in any case, so that matrimony is an impossible problem for them for six or eight reels. But when the camera follows them home we find them loving in such spacious apartments we

safe side, we make room, say, 14x20—maybe more! Why worry? A few dollars of extra set-cost aren't to be compared with the fuss the director would make if he found he couldn't get the angles he wanted!

But today those few extra dollars of set-cost simply aren't there. With an arbitrary limit of \$5,000 for new construction throughout an entire picture, every penny counts. As one of my colleagues recently expressed it, we fight harder now over \$10 of added cost in a set than we did over \$10,000 a year ago.

Plenty of possibilities can stem from this situation, but to me one of the most interesting is the possibility of a trend toward greater realism in the average set. But if it comes, it will have to bring with it a closer degree of cooperation between the art-director, the cinematographer and the director than we've ever had before except in rare and unusual instances. The man who designs the sets must be more intimately acquainted with the way the action is going to be played in it. He must be more familiar with the methods and problems of the man who is going to photograph it. And both director and cinematographer will have to understand more of the art director's problems, and be willing to modify their techniques to coordinate their work with what he can give them.

I don't believe that this is at all an impossible condition. As a matter of fact, we've been experimenting with it a good deal in making "They Got Me



The light fabric walls of this small set could be dismantled quickly to permit more exact placement of cameras. Still by Hal McAlpin.

Covered," Mr. Goldwyn's current picture, which David Butler is directing and Rudy Maté, A.S.C., is photographing. For example, one sequence takes place in the Washington office of a big newspaper syndicate. For that set, we very accurately duplicated the actual Washington office of one of our major news syndicates—including the actual dimensions of the corridor and rooms, which are a good deal smaller than you'd usually expect to build them for picture purposes. Yet they do quite successfully for our purposes.

We build our sets with muslin walls. This, of course, is nothing new; some studios have been doing it for years, for acoustic reasons. Our reasons were chiefly financial: the cloth construction costs less, and if properly braced around doors, at places where pictures are to be hung, and so on, seem just as real to the camera, since they can be given any type of surface-treatment necessary.

Since we know in advance of Bob Hope's genius at ad-libbing, and that when directing a comedy like this Director Butler has a very prolific cuff, we built many of these rooms four-walled, so that we could be ready for any emergency that might suddenly arise as new business was worked out on the set.

Normally, in a case like this, you'd expect that at least one wall of these rooms would be built "wild." In this set, every wall was "wild." Every wall in the set could be—and was—moved out of or into place as many times a day as there were set-ups, almost.

It proved to be good business. Instead of having to crowd the camera and its crew into a cramped space to get, say, a reverse-angle shot, Rudy would simply have the wall moved and his camera had plenty of room. Since the walls were simply muslin stretched over a wooden frame, they were light enough so two "grips" could move them in a matter of moments. When the wall was needed again, it went into place just as easily. Result: time was saved on the set; Rudy and Director Butler got precisely the angles they wanted, instead of cramped approximations of them; set-costs were reduced; and—which I think pleased all three of us more than anything else we achieved an effect of realism that could never have been obtained if we'd oversized the sets "designing for the camera."

Not all of the sets for the picture were made this way. We were able to use some standing sets; and others were built conventionally because it was the studio's first use of fabric sets, and we naturally wanted to be on the safe side wherever there might be any doubt as to the respective merits of solid and fabric construction. But such sets as were fabric-walled proved so successful that I am sure we will make increasingly extensive use of them in the future. As



might be expected, the sound engineers liked them, especially those where we used ceilings, for the fabric ceiling permitted the microphone to be swung overhead in an ideal pick-up position, just above the muslin ceiling, yet with no risk of casting mike shadows. They reduced set-construction costs very helpfully. And the many lightweight "wild" walls gave the cinematographer and director greater freedom in choosing camera-angles, at the same time speeding up production surprisingly. Finally, and in no small part thanks to the excellent cooperation received from Director Butler and Cinematographer Maté, they gave us increased realism.

Another very interesting step in the direction of realism that today's restrictions on set-construction is bringing about is an increasing tendency to make use of real rooms, buildings and locations instead of sets. In making "They Got Me Covered," for example, we had a sequence played in a drug-store; instead of building a set, we found it thoroughly practical to shoot our scenes in an actual drug-store. In another sequence, we made an abandoned gas-works take the place of a huge set which simply could not have been built under today's restrictions. About all we had to do was put in some artificial cobwebs, set up our lights, and go to work.

Another company, needing a typical American town for several sequences in a major feature, has very successfully used the actual town of Santa Rosa, in the northern part of California. As this was for another studio's picture I haven't, of course, seen the results; but I'd be prepared to wager that they'll prove more realistic than any studio-built set.

It is inevitable that in many sequences like this we will find ourselves making steadily increasing use of the projected

background process. In the gas-works sequence from our own picture, for example, we used this process for a number of intimate scenes, employing a background-plate shot in the actual gas-works, and adding a bit of artificial reverberation in the recording. Due to the skill of Cinematographer Maté and special-effects specialist Ray Binger, A.S.C., the results were perfect.

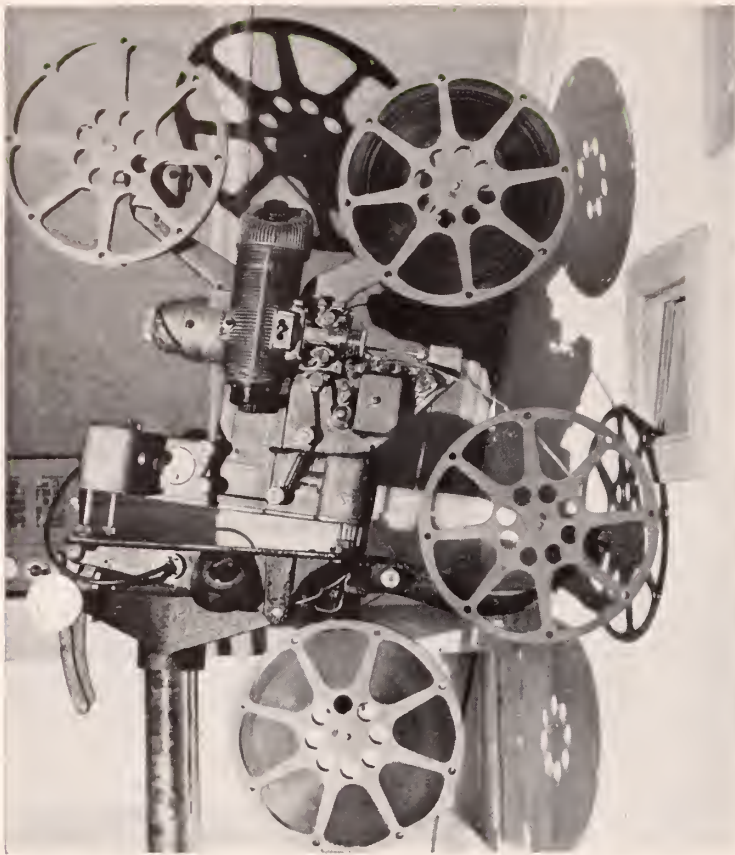
Probably the outstanding recent example of this technique was Warners' recent "Wings for the Eagle." This story was laid in the great Lockheed aircraft plant, and the remarkable realism achieved in the closer shots by using projected background plates filmed in the factory itself point strongly to the tremendous possibilities this process offers.

Indeed, it seems probable that today's restrictions on set-construction may force us to take advantage of the possibilities this process offers for apparently putting enormous sets (with or without people) behind our actors with a bare minimum of actual foreground set-construction. The special-effects people have for years been telling us what we could do this way to save construction, production-cost and effort; it seems ironical that wartime restrictions from outside the industry may arouse us to listen to them and at last use something we've had potentially available all the time.

There is another way in which we can effectively minimize actual set-construction to great advantage. This is in taking advantage of the camera's powers of suggestion. This is going to call for increasingly intimate cooperation between the cinematographer and art-director, with a more active appreciation by each of what the other tries to do and can do. Very often—as in that much-discussed "Xanadu" set in "Citizen Kane"—we can make a foreground piece,

(Continued on Page 430)





Bell & Howell projector adapted for double-system projection. Upper right reel feeds picture; lower right reel takes it up. Bottom reel feeds sound-track, which takes up on regular take-up reel.

substandard camerawork. One of the basic differences between 35mm. and 16mm. is the fact that 35mm. production uses negative film exclusively, whereas most 16mm. professional production uses a reversal-type emulsion, either in the form of black-and-white reversal or Kodachrome. The resolving power of the slower black-and-white reversal films and Kodachrome is such that satisfactory recordings may be made directly on them, even though the films were designed primarily for recording picture rather than sound. Since the resolving power of a film is determined by its grain-structure, it will be obvious that any finer-grained film is more suited to sound-recording. As discussed in detail in this author's article on film materials for professional 16mm. production, in the June issue of *THE AMERICAN CINEMATOGRAPHER*, reversal films have an inherently finer grain-structure than negative films.

While the grain-structure and resolving power of the moderate-speed black-and-white reversal emulsions and Kodachrome are satisfactory for sound-recording, it is difficult to obtain acceptable sound recordings on 16mm. negative emulsions, especially the extremely fast films such as Super-XX and Agfa Supreme, and these emulsions are definitely not recommended for single-system recording.

For some types of production, the greater simplicity and portability of single-system recorders is a tremendous advantage. In fact, certain types of film production would be impossible with the more complicated double-system equipment.

In the 16mm. as in 35mm., the majority of professional recording, however, is done by the double-system method, recording sound and picture on two separate strips of film, each designed specifically for the work it is to do. Despite the excellent quality possible with single-system recording on 16mm. reversal emulsions, it is only natural that for the best sound quality, double-system recording is necessary. The characteristics of an emulsion designed to be ideal for sound-recording must naturally be very different from those of a film designed to be ideal for picture-reproduction, and in using a single film for both sound and picture, some compromises must inevitably be made. Though these are less in 16mm. than in 35mm., they still exist to a degree such that while for many purposes 16mm. single-system recording is quite adequate, it still is not the absolute equal of double-system.

However, there are many cases where a slight sacrifice in quality can readily be made for the greater convenience, portability and simplicity of single-system recording. For recording voice only, or for natural sound-effects, as well as for any type of location recording, I have found that single-system recordings in 16mm. are quite as good as double-system. On the other hand, for high-fidelity recording of music, double-system recording, using a modern high-re-

## SOUND-RECORDING METHODS FOR PROFESSIONAL 16mm. PRODUCTION

By JAMES A. LARSEN, Jr.

FOR recording sound on 16mm. film the professional producer or technician has almost as wide a variety of methods to choose from as though he were working in 35mm. There is not, however, so much disparity between the results produced by the various methods of 16mm. recording as there is between different methods of recording on 35mm. film. Differences in quality exist, of course, but to a much less noticeable degree. Therefore in 16mm. production the choice of a recording method will depend upon a combination of factors, including the accessibility of the subject, the number of release-prints required, the time available, and many others besides the sound-quality required.

The simplest method of 16mm. sound-on-film recording is of course the "single-system" method, in which both sound and picture are recorded simultaneously on a single strip of film. In 35mm., single-system recording seldom, if ever, produces sound of satisfactory quality, and is used only when circumstances demand the utmost portability of equip-

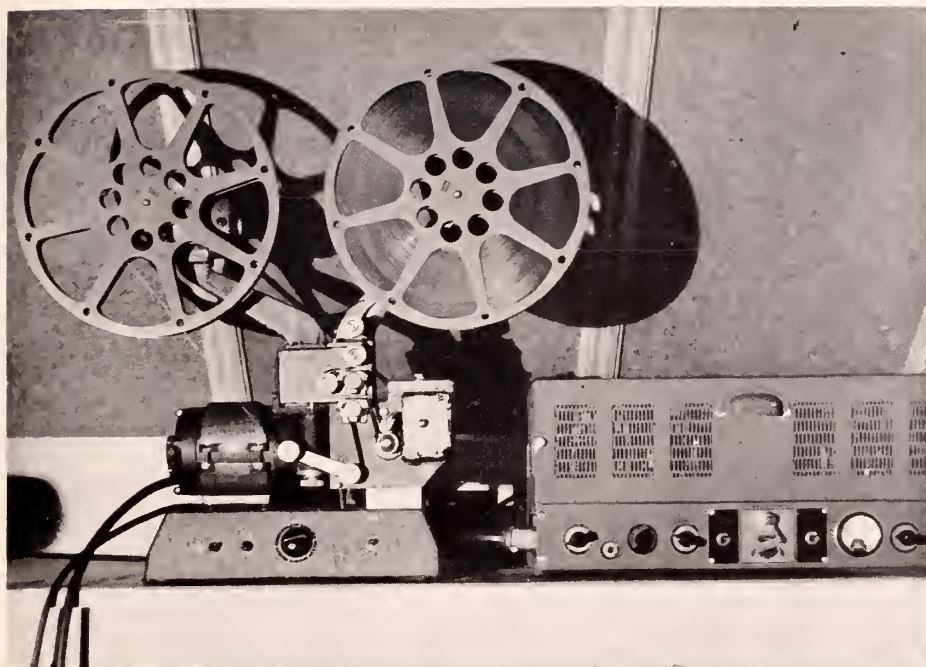
ment. But in 16mm., single-system recording can produce entirely satisfactory sound-quality.

The reason for this difference in quality between 35mm. and 16mm. single-system results lies in the difference in the types of film used for standard and



16mm. double-system sound makes for greater convenience in editing. Professional rewinds and synchronizers are available in 16mm. as well as 35mm.





A film phonograph like this B-M unit is essential for 16mm. re-recording.

solving' sound-recording stock, is decidedly the best.

Especially in the field of educational films, and to some extent in advertising films and certain types of military camerawork, there will always be a type of professional 16mm. films which will be impossible to produce without single-system recording. An excellent example of this is a series of educational films on the Indians of the southwest which the author produced last year, recording both picture and sound on Kodachrome with B-M single-system equipment. In bringing the authentic sounds of native music and the Indian languages to the screen, it was an absolute necessity to reduce all equipment to minimum weight and bulk because much of the travel in the Indian country was done in Indian wagons and by pack-horse.

Furthermore, for psychological reasons it was desirable to make the equipment as inconspicuous and as readily movable as possible. On one occasion, in fact, the complete recording equipment was loaded on one pack-horse, with the 12-volt battery power-supply for the amplifier and camera-motor in one saddle-bag, and the recording amplifier, cables and microphone in the other saddle-bag.

Although Hollywood's acceptance of 16mm. has not been uniform or whole-hearted, it seems more than likely that in the near future, because of the necessity for conserving film and other vital resources, more and more use will be made of 16mm. for pre-production talent, make-up and wardrobe tests in both Kodachrome and black-and-white, and, as was suggested by Lee Garmes, A.S.C., in the August issue of this magazine, for "pre-photographing" entire productions.

The problem of obtaining adequate tests has become one of the critical problems of production. Disregarding the factor of cost which, even before Pearl Harbor, was making serious inroads on the number of tests shot for all but the extremely high-budgeted productions, the

recent rationing of film has made motion picture testing almost an impossibility. In many studios, tests are now being made with stills, which of course cannot and do not give an accurate indication of how the person or thing tested will appear in a motion picture.

But 16mm. film is as yet unrationed. The rather extensive use of 16mm. tests made during the past year by several major studios has already indicated the accuracy and economy of silent 16mm. tests for either black-and-white or Technicolor productions. With modern 16mm. recording equipment—including *single-system*—in capable hands, the same comparison holds true. Between a silent 16mm. picture test and the final 35mm. shot of the same person or object in a black-and-white or a Technicolor picture, there are minor differences, but so small as to be evident only to a trained cinematographer. In the same way, there would be small, technical differences in the quality of a 16mm. recording and a first-class 35mm. studio recording: but these differences would be such as would be evident principally to the super-trained ear of a professional recordist. They would not be enough to interfere with the value of the test; delivery, intelligibility and voice-quality in either speech or singing would be clearly evident from the 16mm. sound-test.

There are other marked advantages to the idea of making tests on 16mm. film. First of all, using single-system 16mm. equipment, the test uses only a single strip of film for both picture and sound, and this one strip of film is a type of film not as yet rationed, and in any event the 16mm. film uses less than one-quarter as much celluloid and chemicals in recording a given length of action.

Moreover, when the film returns from the 16mm. processing laboratory, the test is immediately ready to run, without any need of synchronizing, editing, or using additional film for printing.

And since 16mm. sound projectors are light in weight and simple to operate, the tests may be screened in the office or home of the executives or director, even in a partially lighted room. On the other hand, with a modern 16mm. arc projector, the same test may be projected to a screen-size of 30 feet or more in a theatre or large projection-room.

For the great majority of professional 16mm. productions, where the picture is to be made and released in 16mm., the double-system method of recording is best, exactly as 35mm. double-system recording has proved best for studio production use. As has already been mentioned, double-system gives the highest fidelity in recording, and in addition, the problem of preparing the sound and picture originals for release-printing are greatly simplified.

In making this observation, we do not wish to infer that single-system record-

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Maurer's new "Certified Sound." Top, recorder; middle, amplifier with anti ground-noise and compressor circuits; bottom, portable power-supply.





## AVENTURES OF A COMBAT CAMERAMAN

By WILTON SCOTT

**M**ORE and more of America's cinematographers—both professionals and amateurs—are getting into uniform and journeying to the far corners of the earth to serve their country as Combat Cameramen. A number of them, we know unofficially, have seen action, especially the men of the Naval Reserve Photographic Unit headed by Commander John Ford. Many of the films of the Coral Sea and Midway battles came from their Mitchells and Eyemos. But as yet none of them have had an opportunity to say anything about their experiences under fire.

Among the British Service Camera-

men, though, it's a different story. They've been at war longer than we have, and some news is beginning to filter back from the cinematographers who form the shock troops of the British Army, Navy and R.A.F. Film Units. Their camera assignments have kept them jumping across the map from Norway to the South Seas so rapidly as to provide abundant headaches for any circulation manager who tries to keep magazines going to them. Take Lt. Bryan Langley, of the British Army Film Unit, for instance. He writes, "Don't send my magazine to Singapore any more because I got away by luck. I'm in Cal-

cutta waiting to be posted to the Indian Army Film Unit as a Captain. 'Join the Army and see the world' should be our motto! Since I left home I have been to Lagos in West Africa, Stanleyville in Central Africa, Cairo, was posted to Crete but the Jerries thought otherwise, Cyprus, Palestine, Rangoon, Singapore, Malaya, Batavia, Ceylon, Calcutta and—?"

And if you think today's Army Cameramen have a nice, easy time of it snapping pictures safely behind the lines, consider the experiences of Canadian-born Captain Osmond Borradaile of the British Army Film Unit who, by the way, used to be a member of the A.S.C. when he worked in Hollywood a dozen or more years ago. Last year, as reported previously in *THE AMERICAN CINEMATOPHIL*, he filmed the liberation of Abyssinia, doing so fine a job that General Wavell decorated him.

From there he went to Libya where he and his camera paid at least one visit to Tobruk at a time when it was under siege by the Nazis, who boastfully reported that not even a mouse could enter the city. From there he went to Palestine, Iraq and Iran (Persia), and back again to the Egyptian desert.

There, just before the present Nazi drive forced the British back into Egypt, he headed for Tobruk again. On this trip, his conveyance was a boat which was carrying a little matter of 250 tons of ammunition to Tobruk. En route, they had a visit from the Jerries. The crew kept their guns firing until the ship took her final plunge.

The attack lasted more than two and a half hours before the ship finally sank in flames. For the first two hours Borradaile kept busy with his camera (and he says regretfully he "should have had some good stuff.") Then a bomb knocked him out and set the boat well ablaze.

In the explosion, Borradaile was tossed, unconscious, by the blast, to land on a deck-load of depth-charges at the opposite end of the ship from where he had been working.

A destroyer managed to get near the blazing munition-ship to rescue the crew. At last only two officers remained aboard. They were trying to board the destroyer when a bomb blew the two ships apart. The two officers then moved to the stern of their ship, from where they could jump to the relative safety of the destroyer's deck as the warship passed close by.

Doing this, they passed close by Borradaile, who was still lying unconscious on the depth-charges. And at that moment, the peculiar fate which seems to watch over cameramen went into action. A fuse on one of the charges had become ignited, and just as the officers passed by, it burned through Borradaile's clothes enough so that even though he was unconscious, the pain made him moan and try to move slightly.

Slight as it was, the movement was enough to catch the eye of one of the

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## UNCLE SAM'S CAMERAMEN ARE COMING!

The first class of Signal Corps Cinematographers! Left, Students and instructors: left to right, by cameras, MGM Camera-Chief John Arnold, A.S.C., President Fred Jackman of the A.S.C., and Alvin Wyckoff, A.S.C., coordinator of the course, MGM assistant and operative cameramen who aided practical instruction in front row. Right, Learning the operation of standard Mitchell cameras. Photos by Ted Weisbarth.

THREE months ago it was announced that the A.S.C. and the Research Council of the Academy of Motion Picture Arts and Sciences were collaborating to train qualified amateur and semi-professional photographers to serve as Combat Cameramen in the U. S. Army Signal Corps. Never before had there been such a need for so many trained cinematographers. Never before had there been an attempt at such intensive bona-fide training in cinematography in so short a period. And never before had the foremost technical figures of the motion picture industry lent their support—much less their active participation—to anything resembling a school of cinematography.

We may rightly ask, therefore, how this ambitious plan has turned out.

The only answer is that it is an unqualified success. At this writing, four successive classes have either entered training or graduated—some of the first graduates are already in active service—and a fifth class is being formed. All told, the project has in an incredibly short time provided the Army with over two hundred intensively trained cinematographers capable of taking any standard 35mm. camera into action anywhere the Army may need them, and bringing back a first class picture.

So successful has this training course proven that it is to be continued until the Army's demands for Combat Cameramen are filled. It is being expanded to the extent that qualified applicants are now being accepted from other parts of the country, instead of only from the Southern California area, as was first announced.

In view of this, it may be well to

repeat a brief resume of the necessary qualifications. The applicant must be between 20 and 45 years of age, and physically fit enough to pass the usual physical examination for Army enlistment, since enlistment in the Signal Corps Reserve is required before acceptance into the course. More than this, the applicant must have proven interest and experience in cinematography, either as an advanced amateur or 16mm. professional, and a very thorough grounding in basic photographic technique. Applicants from other parts of the country must be in a position to maintain themselves in Hollywood during the eight-week duration of the course, as neither the Research Council or the A.S.C. can assume this responsibility, and the Army has no provision for feeding or housing members of the Enlisted Reserve until such time as they are called into active service.

The classes receive eight weeks of training, divided into two divisions of four weeks each. The first division is under the general supervision of Emery Huse, A.S.C., and deals with the scientific fundamentals of photography, the development, care and handling of film, and similar basic matters. Sessions are held at the Hollywood auditorium of the Eastman Kodak Company, and actual instruction is given by Mr. Huse and his staff.

The second division of the course consists of intensive practical instruction in the care and operation of standard 35mm. cameras, including Mitchell, the Bell & Howell studio-type cameras and Eyemo and DeVry hand-cameras, the practical use of lenses, filters, meters, etc. This division is under the direct

supervision of Alvin W. Wyckoff, A.S.C., who has been appointed by President Fred Jackman of the A.S.C. as general coordinator of the course. These sessions are held in various of the major-studio camera departments, with the operative and assistant cameramen of each studio's staff serving as instructors in camera-operation, and the Camera Department Heads and Directors of Photography instructing in the other phases.

The first class received its practical instruction at the Camera Department of the Metro-Goldwyn-Mayer studio, with Camera Chief John Arnold, A.S.C., and his staff as enthusiastic instructors. Subsequent classes have been held at the Paramount Studio, with the cooperation of C. Roy Hunter and his staff, at the Columbia Studio, with the assistance of Camera Chief Emil Oster and his associates, and at the 20th Century-Fox Studio, where Supervisor of Photography Daniel B. Clark, A.S.C., and his staff were volunteer instructors.

The climax of the course takes the form of a practical field test, in which each student is given a camera and 100 feet of 35mm. film and sent out on his own to make a picture of his own choosing, as a sort of practical final examination upon which he stands or falls.

Coordinator Wyckoff has proven a dynamo of energy in getting the multitudinous details of this course ironed out and running smoothly. He, himself, gives great credit to the Camera Department Heads and studio personnel with whom he has been associated. "Every one of them," he says, "John Arnold, Roy Hunter, Emil Oster and Dan Clark—not to mention their staffs and operative crews

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Preparing to shoot a scene in Forest Lawn's well-equipped studio. The author at left of camera.

## A CEMETERY THAT MAKES ITS OWN MOTION PICTURES

By HUBBARD HUNT

**A** CEMETERY or Memorial Park is the sort of an institution that very few people would expect to have any use for films—much less having a busy and well-equipped department devoted specifically to the making of motion pictures and film-slides. Yet California's famous Forest Lawn Memorial Park has for some time made and used its own films for direct publicity and for training its staff of more than 450 employees. But then, Forest Lawn has always been a unique institution of its kind: in its twenty-five years of existence, it has established itself as an important part of Southern California community life in many more ways than might be expected of what our forefathers used to call a "burying-ground." Weddings, as well as funerals, are held in its picturesque chapels; its Easter sunrise services are famous; and its collection of authentic reproductions of world-famous works of art—painting, statuary and mosaic—have made its grounds one of the show-places of the region.

As the Park has expanded, demonstration and sales problems have become

more and more complex. More representatives and employees were needed, and the work of the many departments became more complex, and less familiar to the members of the staff generally. To those who have visited Forest Lawn, this may seem incredible, for the outward signs, as one goes through the park, suggest simplicity of operation. Actually, there are some twenty departments, each operating under its own head, and each vital to the service rendered. It may be interesting to check the list of these departments: there are the Accounting Department, the Advertising, Architectural, Communications, Credit, Engineering, Executive Vice-President's, Financial, Flower Shop, General Manager's, Legal, Maintenance, Mortuary, Personnel, Purchasing, School of Instruction, Memorial Arrangement, Service and Treasury Departments. All of the personnel, and of course especially those who contact the public in any way, must be trained to Forest Lawn's standards and systems of service.

Even before the advent of training-films, visual aids were employed in Forest Lawn's training school. Cut-away

sections of the mausoleum, models of the Park, and many other three-dimensional aids to visualization were employed.

About two years ago, Forest Lawn felt the need of motion picture representation to the vast non-theatrical audience, and produced its first major film for this special group. "The Builder's Creed," a color and sound film, has been shown constantly since then for as many as thirty bookings a month, and has proved invaluable as a public relations and goodwill builder. Before making replacement prints recently, some new footage was added to replace scenes of the newest church, the Church of the Recessional. Distribution has been through the Southern California branch of the Standard Talking Film service, under the supervision of Eska Wilson. Advance bookings are scheduled several months in advance, and indications point toward a successful second year.

The war situation has brought about drastic changes in sales procedure, which necessitated the revamping of sales methods. When the author took over the job of creating a series of sales-training sound slide-films, we were fortunate in being able to purchase sufficient S.V.E. equipment to supply our needs for slide films in the training school and for visual demonstration work.

Forest Lawn has for some years maintained a well equipped photographic department with Charles Kausen in charge. Taking black-and-white and color stills for advertising, publicity, and general records has proved to be a full-time job. With a few additions, such as copying-stand, single-frame 35mm. camera, and a few accessories, we were able to proceed with the entire production within the Park.

Mr. Kausen's laboratory, with its complete facilities, has been most helpful during these days of tire-shortages. A complete line of Graflex, miniature, and 16mm. cameras owned by the Park gives us a broad choice of photographic equipment to work with. All titling and art work has been done outside through the artist employed by our Advertising Department. The first two films have been completed and we are about to start production on two companion films.

The author was fortunate in owning professional 16mm. photographic, lighting, and acetate recording equipment, which in these days is, of course, impossible to obtain.

Before production could start, it was necessary to build a small studio. A space normally unused was selected and adequate power lines were brought in for lighting. Several standard sets were made to provide living-room and office interiors. Props were rented and as the first film went into production, we were able to boast of a small and compact

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## Aces of the Camera XXI:

### Joseph Ruttenberg, A.S.C.

By WALTER BLANCHARD

**P**EOPLE who picture an "ace" newspaper photographer as a hard-boiled newshound who goes through life with a "get-the-picture-and-to-Hell-with Art" attitude ought to meet Joseph Ruttenberg, A.S.C., for Joe Ruttenberg began his photographic career as a camera-reporter for Hearst's "Boston American," and went on from there to win the coveted Academy Award for his artistic skill in filming "The Great Waltz." Since then he has been responsible for "Dr. Jekyll and Mr. Hyde," "Woman of the Year," and "Mrs. Miniver," to name only a few of the films brought to the screen with the unmistakable Ruttenberg touch impressed on every frame.

The Ruttenberg career, as Joe looks back on it now, begins very amusingly.

Back in his native Boston, 'teen-aged Joe decided he had come close enough to man's estate that he ought to get a job. To this end, he haunted the office of an employment agency operated by a boys' group to which he belonged. "But to tell the truth," says Joe, "it wasn't so much the nice way they told me each day that there was nothing for me that made me stick to that particular agency as the fact that they were just a few doors from the plant of the 'Boston American,' which was one of the first newspapers in the country to put its pressroom behind big show-windows for the benefit of the public. Every day, after making sure the agency didn't have a job for me, I'd walk down the street and spend hours gazing in at those fascinating big presses!

"Finally there came a day when, just as I was about to leave the agency, the phone rang. The girl at the switchboard hastily called, 'Wait a minute—this may be something for you.' A moment later she told me the phone call was from the 'American,' and there was a job open there for a copy-boy—if I want it!

"Did I *want* it—! That girl never knew how close she came to being kissed that day, for a job at the 'American,' near those fascinating presses, was my idea of heaven! I broke all records covering the distance from the employment office to the newspaper and starting to work!

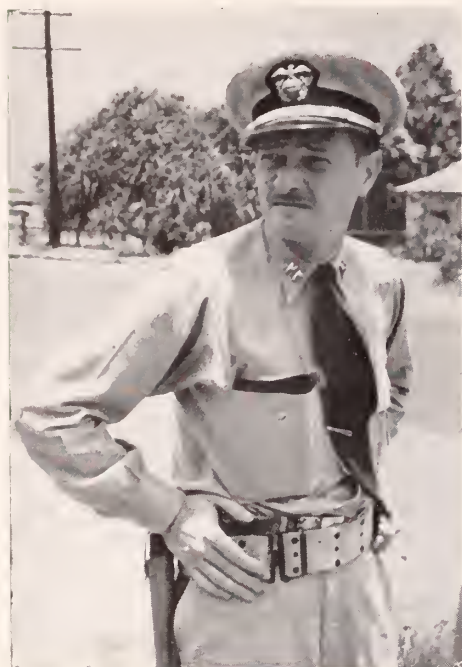
"The job itself wasn't particularly taxing to my young mentality. A 'copy-boy' in a newspaper office, you know, is a glorified messenger-boy. We sat on a bench like so many bellhops, and rotated on a 'first in, first out' basis in answering the Editor's cry of 'Boy!' The chief task was to take the typewritten copy from him and shoot it through the pneumatic-tube conveyor to the composing-room, where it was set into type. For this, we received the princely sum of \$3 a week.

"But that 'first in, first out' business worked in more ways than one. I learned that after a few weeks, when an economy wave hit the 'American.' Expenses had to be pared—including the salary of one copy-boy. As the copy-boy most recently hired, I was logically the one to be fired. Fortunately, I got word of it about a day ahead of time. As I said, I was thoroughly in love with a newspaper career, and determined to hold onto that

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# A.S.C. on Parade



The question everyone's been asking, "Where's Lt. Gregg Toland, A.S.C.?" was answered this month when Gregg suddenly bobbed up at the 20th Century-Fox studios to complete a very important filming job for Commander John Ford's Navy Film Unit. Above we see a picture of Gregg, snapped somewhere farther west in the Pacific battle area, if we're to judge by that hunk of young artillery hanging from his belt.

A great big salute to Henry Freulich, A.S.C., who is now Private Henry Freulich of the U. S. Marine Corps. Yep—like all leathernecks, he got into uniform by enlistment, and he's working up the leatherneck ladder the hard way, rather than using his professional standing to wangle a commission. Just the same, we'd like to see Henry with his usually flowing locks cropped in a regulation "Devil Dog" haircut—!

A surprise visitor this month was Capt. Art Lloyd, A.S.C., of the Army's Signal Corps, who showed up unexpectedly at the A.S.C. clubhouse with his smile working overtime and looking ten years younger in spite of all the hard work the Army's been giving him.

Billy Skall, A.S.C., was yanked off his job Technicoloring Walter Wanger's lovelies in "Arabian Nights" to go on active service as a Captain in the Army Air Force. Did you know, by the way, that Billy flew with the R.A.F. (then the R.F.C.) in the last war?

And W. Howard "Duke" Greene, A.S.C., has taken over for Billy as Technicolor specialist on "Arabian Nights."

Victor Milner, A.S.C., taking himself a quick trip to Texas to visit his son, Lt. Victor Milner, Jr., of the Army Air Force, before starting Cecil DeMille's "The Story of Dr. Wassell."

Congratulations to Eddie Cronjager, A.S.C., on his recent marriage to the charming Yvette Bentley.

Congratulations, too, to Russell Metty, A.S.C., the proud papa of a brand new 7-pound baby daughter.

Joe Ruttenberg, A.S.C., they say, is trying to quit smoking those big, black cigars—so Director Norman Taurog pulled a lovely rib on him. Seems Norm "planted" a generous supply of Joe's favorite El Ropos with the crew the other day, and every few minutes a juicer, or a grip, or some other member of the troupe would pat Joe on the back and present him with a cigar. By the end of the day, Ruttenberg's pocket bulged with no less than 200 smokes!

Karl Struss, A.S.C., hurries up to the "For Whom The Bells Toll" location to join Ray Rennahan, A.S.C., glamorizing Paramount's Technicolor epic.

Joe Valentine, A.S.C., took time off the other day, so we hear, to take his Army physical. Looks as though Uncle Sam's got the finger on our Joseph!

Theodor Sparkuhl, A.S.C., phones to tell us he's sure the picture we used on our July cover shows his unit of "Wake Island" at work instead of the one skippered by Harry Hallenberger, A.S.C. If so, we apologize—but it sure looked to us like Harry's well-known flat-topped chapeau beside the camera. Maybe we're both wrong, and it was the unit piloted by Billy Mellor, A.S.C., who also shares credit on the picture!

Speaking of Billy Mellor, Paramount has wisely picked up his option for another year of lensing . . . if Uncle Sam doesn't exercise a prior option!

Clyde De Vinna, A.S.C., who's been with MGM since the days he and "Woody" Van Dyke were making silent Tim McCoy Westerns, moves over to 20th-Fox on a swell new contract.

Just after finishing the first episode of "Flesh and Fantasy" at Universal, Stanley Cortez, A.S.C., was called back home by his boss, David O. Selznick, for a fresh loanout to glamorize "Powers Girl." Meanwhile, Paul Ivano, A.S.C., carries on with "Flesh and Fantasy."

Greetings to two new members of the A.S.C.—Stanley Horsley, A.S.C., and John S. Crouse, A.S.C.

## Arthur Todd, A.S.C.

It is with sincere regret that we chronicle the passing of Arthur Todd, A.S.C., who died suddenly on August 28th as the result of a heart ailment. A veteran of the camera profession, Todd was one of the best-liked members of the A.S.C. He received his start in the industry in 1915 as a helper in the laboratories at Fort Lee, N. J., and rose rapidly to the position of First Cameraman.

During his career he was associated with nearly all of the producing companies, including many pioneer organizations now long forgotten. During the later silent days he was for many years associated with Universal, where he photographed most of the highly successful films starring Reginald Denny. More recently he had been under contract to Warner Bros., where he had worked for the last ten or twelve years.

Quiet, capable, and always good-natured, Arthur Todd will be missed by a host of friends in and out of the industry. To his wife and family we extend our sincerest sympathy.

Peverell Marley, A.S.C., and Ernest Palmer, A.S.C., will be at 20th-Fox for another year, as Camera Chief Dan Clark, A.S.C., and Col. Zanuck picked up their options.

Lee Garmes, A.S.C., on loanout to RKO, filming "Stand By to Die."

George Barnes, A.S.C., after finishing "Once Upon A Honeymoon" for RKO, moves over to Universal to glamorize Diana Barrymore in "Nightmare."

Robert De Grasse, A.S.C., also Universal-bound, to toss around the glamor-lightings for "Pittsburgh" and Marlene Dietrich.

Arthur Miller, A.S.C., heads out to the desert to scout locations for "The Immortal Sergeant." Bet he'll appreciate the story the soldiers out there tell about the soldier who died while on desert duty, went to Hell—and sent back for his blankets!

Harry Stradling, A.S.C., gets the assignment to photograph MGM's "The Human Comedy," with Mickey Rooney, but pointedly without the services of Author William Saroyan, who was originally to have directed.



# THROUGH the EDITOR'S FINDER

ONE of the finest compliments this magazine has ever received came to us recently from the Visual Aids Director of one of our largest and most important Army Service Commands. In his letter he told us that *THE AMERICAN CINEMATOGRAPHER* is "being used to good advantage at this headquarters in the training of men who will operate training film libraries within this Command." By way of confirmation he enclosed a copy of a memorandum issued to the men he was training, urging them to read specified articles in *THE AMERICAN CINEMATOGRAPHER*. From the first seven issues of this magazine for the current year, no less than twenty-one articles were listed as being helpful to these men in the Army's visual education service. Five of them were indicated as *compulsory reading material*, with the statement that questions based upon them would be included in the Final Examinations for the course.

We are sincerely appreciative of this compliment, and of the many similarly appreciative comments we have received from photographers in the Services of the United Nations all over the world. Many months ago, when active American participation in this war loomed only as an eventual probability, we determined to make the pages of *THE AMERICAN CINEMATOGRAPHER* a source of worthwhile practical information for photographers in our Services and those of our fellow-democracies. For photography, and particularly cinematography was, we felt, bound to play an increasingly important role in the War Effort. Today, comments like the one quoted indicate that this viewpoint was correct, and that, we are so far at least, striking usefully close to our target.

But in addition to saying "thank you" to our readers in the photographic branches of the Services, we would like to ask that they let us know precisely what type of information they most need. Due to *THE AMERICAN CINEMATOGRAPHER*'s position in the 35mm. professional field, and its unique combination of that with unexcelled contacts with 16mm. professional, educational and amateur activities, this magazine has unequalled access to the best and most authoritative information on almost every phase of the making and use of motion pictures. But it is not always easy to determine, from a comfortable desk in Hollywood, just what information will be most useful to the men actually in the field. For that, we ask the cooperation of our readers in the Service, to the end that *THE AMERICAN CINEMATOGRAPHER* may continue to serve them to the fullest practical advantage.

THE other day at a party we found ourselves sitting next to a well-known theatre manager. During the conversation we asked him to what ex-

tent (if any) he felt photography and its related technicalities were noticed by the cash customers who paid their money at his box-office. His reply—we're convinced it wasn't given for mere politeness—was illuminating.

"Do they notice photography?" he said. "The best way I can sum it up is this: if I were making an independent picture myself, and knew I had to cut corners to keep within a slim budget, I'd do it by saving money on actors, on direction, or on story—but never on photography! Audiences don't seem to expect Academy Award acting in every picture (after all, some of our 'hottest' box-office names are really little better than amateur actors!) and they don't mind it if the direction isn't always up to the John Ford standard. They'll sit and enjoy some amazingly poor specimens of story and dialog. But today—make no mistake about it—they *expect* first-class camerawork. Ten or a dozen years ago, they wouldn't; but today they do. Maybe they're more familiar with good photographic values now that there's a candid camera or a home movie outfit in almost every home. Anyhow folks go to the theatre looking for good camerawork.

"There's another angle on it, too, I've played plenty of pictures I knew were 'quickies'—but the producer had been smart enough to pay a little extra for a cameraman who could give the picture 'A-picture photography,' and nine times out of ten the audience would accept the picture as an 'A'. On the other hand, I've played pictures I knew cost quite a bit more money, but where the producer had tried to save money on his camera crew—and the picture looked more like a 'quickie' than the real 'quickie' did, and left the audience with a feeling the film had been cheaply made.

"No, from the exhibitor's point of view, camerawork is one phase of production where you'll save money by paying for the best, for modern audiences can see and notice any cheapening there quicker than in almost any other phase of picture-making!"

LATELY we've noticed in several studios a regrettable tendency in the organization and crediting of special-effects photographic departments to subordinate the photographic staff to non-photographic people, especially art-directors and directors. This work is perhaps the most intensely specialized in all the long chain of production, and the most dependent on the photographic "know how" which can come only from the highly-skilled cinematographers who actually bring these shots to the screen. It seems decidedly wrong, therefore, when "special photographic effects" are credited, to see no differentiation made between the cinematographers and the art-directors or special-effects directors

who work with them. It seems wrong that in some studios these essentially photographic departments are operated under the Art Department, and in others headed by art-directors or directors who give no credit whatsoever to the cinematographers who actually bring the scenes to the screen.

In pointing out this injustice, we don't mean to imply that the contributions of these designers and directors aren't of value: in many instances they can be of inestimable value in coordinating the visual effect and action with the technical requirements inevitably imposed by the trick process used. But regardless of which of the various special photographic processes may be used, or the value of the assistance received from a special-effects designer or director, the success or failure of the shot ultimately hinges on the skill of the cinematographer who actually executes it. It seems to us, therefore, that the special-effects cinematographer should in all fairness receive credit commensurate with the responsibility he bears.

AS MORE and more of our fellow-Americans don the uniform of the nation's armed forces to do their part in the world-wide struggle for Freedom, an increasing number of "the people we know"—cinematographers, both professional and amateur, are going into service. And we like to suggest to readers among the nation's amateur movie clubs that they follow the policy already adhered to by the A.S.C. and a number of the country's more progressive amateur photographic clubs, of placing members serving their country in a special list of suspended memberships "for duration"—waiving dues and the requirements, so often encountered, requiring fairly constant attendance at meetings. The dues of the average amateur movie club aren't high—but in conjunction with the \$50 a month the average soldier or sailor gets for serving his country, they may be prohibitive. Let's do our part, and keep our fellow-filmers in service as active members while they're doing their bit, without subjecting them to hardship. Most amateur groups can afford to give that much—especially when you think what your uniformed fellow-members have offered that Freedom may live!

WITH film conservation a major topic these days, we wonder when it will occur to some of our special-effects experts that, given slightly longer time and sufficiently painstaking craftsmen, many of the special-effects shots which are now as a matter of course handled by photographing each component and finally blending the several components together in the optical printer could be done equally well direct in the camera. Back in the earlier days of the industry, trick-shots were all done that

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# PHOTOGRAPHY OF THE MONTH

## THE PIED PIPER

Twentieth Century-Fox Production.

Director of Photography: **Edward Cronjager, A.S.C.**

This is some of the finest work we've seen Edward Cronjager, A.S.C., do in some time. The story covers such a wide range of moods, ranging from brittle comedy at the beginning to sombre drama in the later sequences, that it is a difficult task indeed for a cinematographer to make a photographically coherent production out of it while yet responding to the mood requirements of the individual sequences.

Cronjager does this to perfection, however. The opening sequences of the picture are given a brittle, high-key treatment which provides a perfect setting for the introduction of the irascible "Mr. Howard" as played by Monty Woolley. From this start, Cronjager's treatment proceeds at a sort of matter-of-fact pace for several reels, and only when the action of the story becomes definitely more sombrely dramatic do you realize—with some surprise—that Cronjager's camera-treatment has kept pace with the story, shading imperceptibly from the high-key beginning to the softer quality and low-key lightings dramatically necessary for these later sequences. To my mind, one of the pictorial highlights of the picture was the strongly dramatic treatment Cronjager gave the climactic interview between Woolley and the Nazi major.

In a picture like this, it may be taken for granted that in the closer shots a cinematographer of Cronjager's calibre will make generous use of strong character effect-lightings. There are plenty of them in "The Pied Piper," and Cronjager has handled them with such skill that they fit perfectly into the action, and only by an effort of mind does the camera-conscious viewer bring himself to realize how effective they are from a purely photographic point of view.

The special-effects work is excellent, though we'd have felt better had there been more indication of gunfire and bombs dropping in the scene of the air raid on Brest. We're also probably vastly in the discredited minority, but to us the picture would have been more pleasing had there been less "mugging" on the part of some of the principal players—including those to whom many critics have given the most praise. But "The Pied Piper" is well worth seeing, surprisingly filled with excellent, natural comedy as well as drama.

## DESPERATE JOURNEY

Warner Bros.' Production.

Director of Photography: **Bert Glennon, A.S.C.**

Special Effects by **Edwin A. DuPar, A.S.C.**

"Desperate Journey" is a glorified

example of a "cops-and-robbers" melodrama with Gestapo heavies and an A-picture budget, but Bert Glennon, A.S.C., has made it one of the photographically more worthwhile offerings of the season. Glennon brings it to the screen with the crisp, virile photography he knows so well how to deliver, and contributes some of the season's most interesting effect-lightings and compositions.

It would be unfair to attempt to single out only a few scenes or sequences for special commendation: almost every scene gives Glennon opportunity for striking compositions and lightings, and he makes every one of them a photographer's delight. The skill with which he manages to achieve vigorous effect-lightings while at the same time keeping every bit of the fast-moving "thrill" action clear for the audience to follow deserves careful study. The film climaxes, by the way, with a chase sequence which is a delight to anyone who, like this reviewer, used to revel in the action-films of the old silent days.

The special-effects work of Edwin DuPar, A.S.C., is equally outstanding. The miniature-work in the bombing sequences, and the great amount of process-projection and other intricate trick camerawork deserve the highest praise. DuPar's name hasn't been seen often enough on the screen of late, but it is one we will have to reckon with in this specialized field in the future.

On the other hand, we must remark that there were a few scenes toward the end of the picture—especially the sequence in the R.A.F. headquarters—which did not match up at all well with the body of the picture. They gave us the impression that they must have been photographed by a second unit whose director of photography tended to "walk through" his assignment. Certainly, he took no trouble to attempt to match his technique with Glennon's, an omission which is to be infinitely regretted.

## HOLIDAY INN

Paramount Production.

Director of Photography: **David Abel, A.S.C.**

We've often wondered if there was any genuine merit to the way the average producer worries so about entrusting his productions only to cinematographers with decidedly current screen-credits. "Holiday Inn" proves that the answer—at least if you've a cinematographer like David Abel, A.S.C.—is no. For Dave Abel had been in comfortable retirement for two or three years when producer-director Mark Sandrich persuaded him to get into harness once again to bring this delightful musical to the screen. And Abel carries out his assignment with the same deft touch which made the many Astaire-Rogers musicals he photographed so charming pictorially.

Scene after scene are pictorial delights; and in between are Fred Astaire's dances, photographed as only Abel can photograph them. In some of the early scenes we thought personally that Bing Crosby's facial appearance could have stood some improvement; but then, Mr. Crosby is a gentleman with decided and inflexible ideas on make-up (or its lack) and, after all, it's his own face. In his place, though, we'd have worn a better make-up, and given the cinematographer at least half a chance.

There is some excellent, though uncredited, special-effects work in "Holiday Inn," and we've an idea that Paramount's optical printer expert, Paul Lerpae, ought to take a big bow for putting the snap into the much-publicized "firecracker dance."

The climactic sequence of the picture is one no amateur interested in what the inside of a studio looks like should miss. It shows something, at least, of studio operation and the making of a boom-shot, and it rings surprisingly true. But, for that matter, "Holiday Inn" is a picture no one should miss.

## TALES OF MANHATTAN

Twentieth Century-Fox Release.

Director of Photography: **Joseph Walker, A.S.C.**

"Tales of Manhattan" is one of the most difficult assignments any cinematographer could face. Not only does it have a cast composed largely of top-flight stars, each of whom has his or her individual photographic requirements, but it consists really of five separate stories, each with its own mood, and each demanding different photographic treatment. Joe Walker has done an incredibly fine job in giving each its necessary treatment, yet keeping them all welded into a photographically coherent continuity.

You'll find a considerable variety of photographic styles in "Tales of Manhattan"—a tribute to Walker's versatility—yet each is so deftly handled that it never manages to be out of keeping with the rest of the film.

As usual with Walker's work, a high quality of pictorial effect is maintained throughout. So, too, is the often neglected smoothness of optical effect. All told, "Tales of Manhattan" is worth seeing, if only to see what an artist like Joe Walker can do on one of the year's most difficult assignments.

## THE TALK OF THE TOWN

Columbia Production.

Director of Photography: **Ted Tetzlaff, A.S.C.**

"The Talk of the Town" has one of the fastest and most completely cinematic openings we've ever seen. There



is a world of action, and a world of clever cinematic treatment packed into its first few hundred feet. That opening is so good that we can sincerely urge readers who may chance to come late to wait for it, even if it means sitting through an indifferent "B-picture" to do so.

The fact that "Talk of the Town" was photographed by Ted Tetzlaff, A.S.C., should in itself be enough indication that it is an almost flawlessly photographed production. The fast-moving story, which vacillates between bright comedy and melodrama, doesn't give him such pictorial opportunities as, say, "The Lady is Willing," but every scene is an example of polished perfection. His treatment of the players is, as always, outstanding.

The special-effects work—unfortunately uncredited—deserves more than a little praise, too.

## WINGS AND THE WOMAN

RKO Release.

Director of Photography: **Mutz Greenbaum.**

This picture, produced as "They Flew Alone," is a very recent import from England, and in looking at it from the technical viewpoint, certain allowances must be made for the fact that it was produced under the inevitably difficult circumstances of working in a decidedly war-torn country. In view of that, it must certainly be said the Cinematographer Mutz Greenbaum and his associates have done a decidedly praiseworthy job. The picture very certainly has its technical flaws—there is an uneven quality which may very likely have been due to the over-crowded and understaffed condition of the British film laboratories, for instance, and perhaps to the duping necessary to provide an American release-print negative—but the net result on the screen is pleasing.

Greenbaum has managed a good deal of excellent lightings, and his treatment of the players is generally excellent, though we can't help feeling that Anna Neagle should always be photographed in Technicolor.

The work of the special-effects staff—Alan Jaggs, Desmond Dickenson and Douglas Woolsey—with that of Jill Irving, who is credited with the montages, is a particular highlight of the picture. Some of the miniature and back-projection work is unusually fine, taking rank with the best we've seen this year. The way both these and the production scenes are intercut with newsreel stock-shots of some of Amy Johnson's actual flights reflects particular credit on the skill of the miniature experts. We can't help wondering, though, why in so many scenes they made the planes apparently fly with one wing low! The montages are another feature of the film deserving of praise. In an inevitably episodic film like this, the montages naturally have a difficult part to play, and these do it well.

## FOOTLIGHT SERENADE

Twentieth Century-Fox Production.

Director of Photography: **Lee Garmes, A.S.C.**

Surprisingly enough "Footlight Serenade" turns out to be one of the most pleasing little musicals of the year. It's inconsequential, but entertaining: and Lee Garmes' crisply pictorial camerawork is sheer delight. Even if (like this reporter) you're allergic to Victor Mature, don't miss "Footlight Serenade." Garmes' lightings and compositions are worth the price of admission any day.

There is some interesting special-effects work, among which Betty Grable's process-projection dance with the shadow is a particular highlight.

## THIS IS THE ENEMY

Artkino Release.

Unfortunately, no technical or other credits are available on this unusual Russian picture. Really, we should say "pictures," for it is a cinematic equivalent of a series of one-act plays; five short films arranged to form a single feature-length program.

Whether you agree with the Russians politically or not, don't by any means miss this picture if you're interested in what can be done in expressing ideas and ideas on the motion picture screen. Every inch of this film has a strength and virility that is refreshing, even if it is in many instances decidedly strong meat. It makes one wonder if we in Hollywood have become too sophisticated to turn out pictures based on equally real, untrammelled emotions.

Technically, the less said about the film, the better. The quality of both photography and sound is uneven—sometimes excellent, sometimes very poor. But considering that parts of the film were produced quite recently in studios in Moscow and Leningrad—during the current war—and that the further operations of duping and superimposing English subtitles to translate the Russian dialog, did nothing to improve the technical quality, this can be excused in view of the amazing dramatic force of the film. It should be on everyone's "must" list.

## CALLING DR. GILLESPIE

Metro-Goldwyn-Mayer Production.

Director of Photography: **Ray June, A.S.C.**

MGM did Cinematographer Ray June, A.S.C., a great injustice when they previewed a work-print of this picture for the press. The print was in unusually poor condition, even for a work-print, and did its best to conceal the fine quality of photography which Ray June, A.S.C., brought to this little picture. Even though it's one of those pictures you're usually likely to see occupying the lower end of a double-bill, it's worth seeing.

June's effect-lightings and compositions make the picture seem much more important than it really is, and several surprisingly excellent acting performances add interest.

## HERE WE GO AGAIN

RKO Production.

Director of Photography: **Frank Redman, A.S.C.**

Special Effects by **Vernon L. Walker, A.S.C.**

"Here We Go Again" is one of those pictures designed mainly for laughs, and inevitably offers its cinematographer opportunities only as an afterthought. For the first couple of sequences, Cinematographer Redman certainly has very little opportunity; but as soon as the action moves to the DeLuxe resort hotel, he has at least a slightly better opportunity to show what he can do.

Meanwhile, he deals capably with his players, and when such opportunities as the musical numbers at the party come along, he rises excellently to the occasion. He handles his exteriors well, indeed, and performs like a veteran in the various wire gags and in the climaxing chase sequence. Incidentally, if you grew up on old-time visual comedy and chases, you'll find much enjoyment in the way they're employed here to offset the verbal comedy to be expected with a cast of radio comics. The trick of using midgets to double for Charlie McCarthy and Mortimer Snerd, to permit them to move about, run and even dance in long-shot, is clever.

## JACKASS MAIL

Metro-Goldwyn-Mayer Picture.

Director of Photography: **Clyde De Vinna, A.S.C.**

There's nothing about a Wally Beery comedy that lends itself to photographic effectiveness, but Clyde De Vinna, A.S.C., has turned in his usual excellent job on this one. The exterior sequences, as usual with De Vinna, are noteworthy examples of fine exterior camerawork, and deserve careful study. We personally also enjoyed the sequences with the old-time train very much.

## FLIGHT LIEUTENANT

Columbia Production.

Director of Photography: **Franz Planer, A.S.C.**

While this isn't one of Cinematographer Planer's most important productions, he does his customarily excellent work in bringing it to the screen. The action covers quite a wide range of moods and locales, and he handles all of them with pictorial effectiveness, and often with excellent realism. Some of his effect-lightings are excellent. His treatment of the players is very good. The uncredited aerial cinematography is decidedly a highlight of the picture, even though some of the scenes appear to have been stock-shots from previous, and more pretentious aerial films. The special-effects work likewise deserves praise.



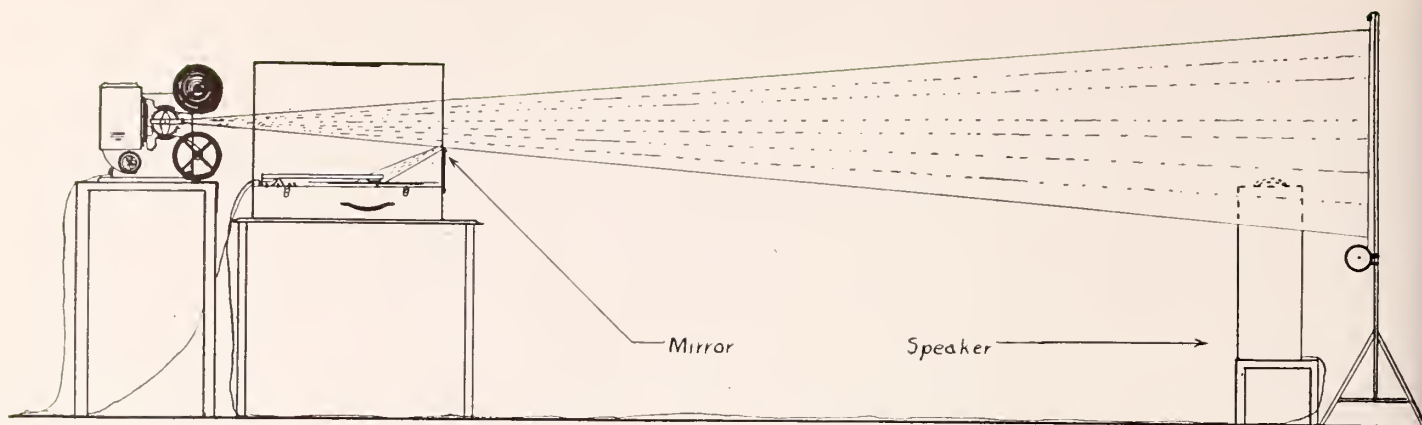
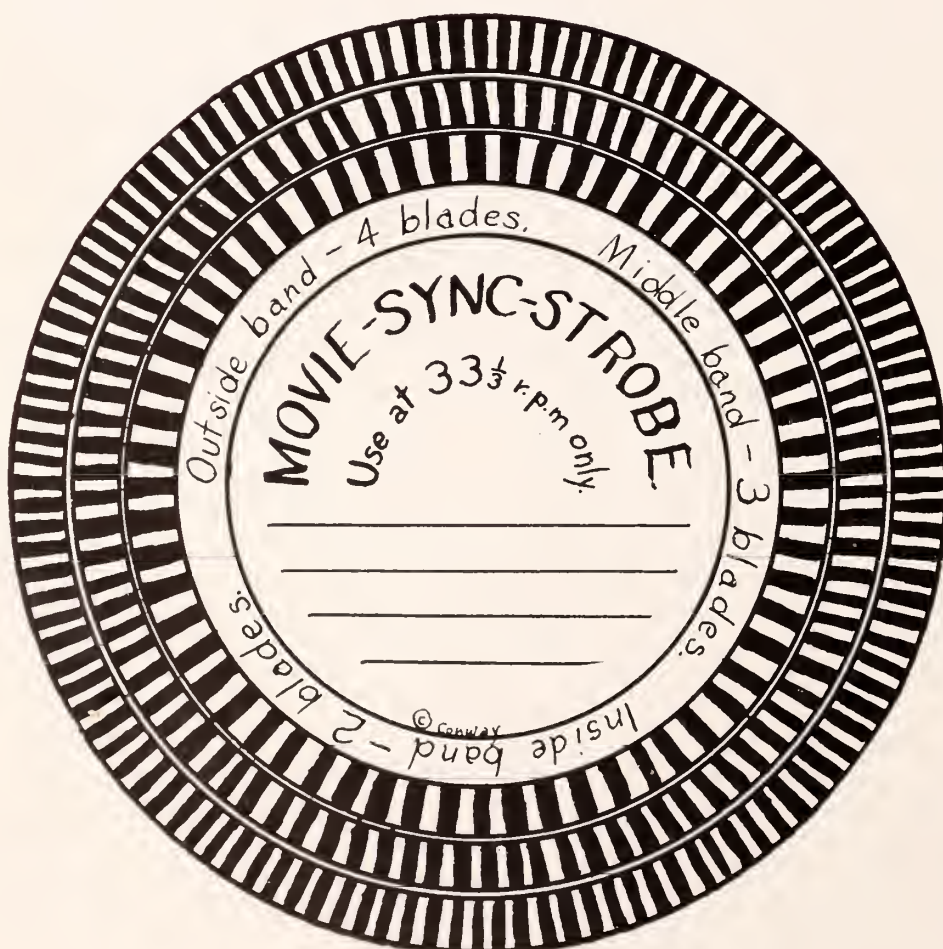


Illustration showing equipment setup for light reflection on stroboscope.

# "Strobo-Sync" Your Movies With Sound-On-Disc

By D. LISLE CONWAY

President, Syracuse Movie Makers' Association



SOONER or later, most amateurs who pursue their hobby seriously become painfully aware of the limitations of strictly silent movies, and want to add sound to their pictures in the form of music, narration or even lip-synchronized dialog. Sound-on-film is the ideal method, of course, but 16mm. sound-film recorders and projectors are still pretty expensive—not to mention calling for pretty high priorities these days.

Recording your sound on disc is simple, inexpensive and practical, but since sound and picture are separate, there comes the problem of synchronizing them in recording and reproduction. There have been units made by which you could interlock a projector and a record-turntable either mechanically or electrically, but here again you run into expense and into the fact that the makers of these gadgets are busy on other, more important products "for duration."

Members of the Syracuse Movie Makers' Association, however, have been getting around these difficulties by synchronizing picture and sound disc by mean of *light-flashes*! Using a stroboscope-disc like the one illustrated on our records, and illuminating it during recording and projection by the intermittently-flashing light spilled from the projector (either 16mm. or 8mm.), we've been able to keep picture and sound so accurately synchronized that musical accompaniment, narration, and even lip-sync dialog unreel almost as smoothly as though they were sound-on-film.

Using this system, only a minimum of equipment is needed, and most of it can



be found or purchased for a very few dollars. Among the needed equipment is a 33 $\frac{1}{3}$  rpm. turntable motor and turntable capable of playing a 16-inch disc; a pickup with a long arm and with from one to three ounces needle pressure; an amplifier, or a radio with a pickup attachment; a speaker with about thirty to fifty feet of voice-coil line to run to the amplifier or radio; a case to hold the amplifier and pickup unit and also one for the speaker; and the stroboscope disc shown here in the illustration.

It is not necessary to own a recording unit, although if you own one, the expense of making the recordings may be saved. However, in any city there is almost always a good recordist who will be willing to record a 16-inch disc for a maximum of five dollars per disc; which is a little more than the cost of a single one hundred foot roll of black-and-white 16mm. film. And the 16-inch disc will "sound" a full 400-ft. picture.

The 33 $\frac{1}{3}$  turntable-motor will probably have to be purchased and if one of the dual-speed variety (33 $\frac{1}{3}$ -78 rpm) is obtained, it can be used for playing regular commercial records in addition. The important fact in selecting the motor is that there should be no wavers or "wows" in tone on playback at 33 $\frac{1}{3}$  rpm if music is to be used in the finished recordings. A weighted 12-inch turntable (or larger) is advantageous as it will help smooth out any motor irregularities that may develop later.

The pickup may consist of one of the cheaper type crystals using needles, or the more expensive, but longer lasting permanent point type. The author started out with the former, but later purchased a cartridge with a sapphire permanent point. This was mounted on a wooden block and used the former pickup-arm which was counterbalanced to make up for the increased weight of the new cartridge. Inasmuch as crystal pickups are mostly of the high-impedance type, the wires from the pickup to the amplifier should be as short as possible, and should be shielded. Otherwise a very noticeable loss of "highs" above 4000 cycles will occur and hum is liable to be introduced. Of course a magnetic pickup may be used with a low impedance output, but good magnetic pickups are rather expensive. In selecting the pickup, it might be said that from the standpoint of quality there are several different grades on the market today, and if a poor pickup is purchased, the quality of the sound cannot be improved beyond the range of the pickup, no matter how good the amplifier or speaker may be. For this purpose it is advisable to obtain a pickup with a flat frequency-response of from 30 to 5000 cycles and preferably to 7500 cycles. At present there is a pickup on the market with a fairly flat range up to 10,000 cycles and which sells at the same price as the former two types, but unless the amplifier and speaker are of the high-fidelity type, nothing can be gained in increased range by its purchase.

The amplifier may consist of a radio with a pickup attachment or phono in-

put; but for those ambitious amateurs wanting something better, an amplifier can be very easily built from standard blue-print designs either by themselves or by a radio-minded friend. The watt output or power need not be great for average use, but the amplifier should have fairly flat frequency-response characteristics up to at least 7000 or 8000 cycles.

It is not necessary today to have large, bulky amplifier units, for with the new tubes on the market at present, units may be built that are small in size, and more efficient from the standpoint of quality and power than the big amplifier units of a few years back. However, it might be wise to check on the availability of the tubes intended for use, as standardization due to the war has occurred in the radio industry—and while you might be able to get almost any type of tube now, replacing non-standard ones might be quite a problem later.

The amplifier should have both volume and tone controls. If both the high and low ends of the sound-frequency curve can be controlled separately, abnormal bass may be eliminated as the recording is played near the inside where loss of "highs" occur; and the scratch level may be reduced as the recording wears through repeated use.

The speaker for the average home may be an ordinary large-size radio speaker or one such as used in small public address systems. For outdoor use or in halls of any size where audiences are liable to be large, a 12-inch speaker or larger should be used.

There is some debate as to whether the "pm" or permanent magnet speakers are better for this purpose than the dynamic speakers. However, the author feels that if a dynamic speaker can be used, it will be better from the standpoint of quality—and for home or small hall use, is superior to the "pm" type. Using a dynamic speaker means that a three-wire cable will have to be run from the amplifier to the speaker instead of the usual two as in the case of the "pm" type. One wire of the three-wire cable will run to the high side of the voice-coil; the second wire to the high side of the speaker field; and the third wire will serve as a common negative for field and coil. The cable may be any length, but about 30 to 50 feet will be all that is necessary for most instances. If you expect sometimes to have to show your films in a large hall, you can supply yourself with an extension which can be added to the regular cable for these occasions.

In using this set-up the speaker matching transformer will be mounted in the amplifier. To connect the speaker-cable to the amplifier a five-prong plug should be used, the two extra prongs in series with the A.C. being shorted so that the A.C. current of the amplifier will be broken if the plug is accidentally pulled out while the amplifier is in operation—thus preventing the blowing of condensers in the amplifier.

The speaker may be placed in a cabi-



Top, recording, with strobe disc in place. Beneath, projector and recorder set-up for synchronized recording. Middle and bottom, set-up for synchronized projection.

net or case of any design wanted, although the full efficiency will only be realized when it is properly baffled. A small case with "barn doors" or folding swing-out sides will give a maximum of portability and efficiency.

If the screen used is of the porous type such as theatrical motion picture screens are, the speaker may be placed behind it; otherwise the speaker should be set out either above or high to the side of the screen so that loss of "highs" through absorption by the screen material will not result.

The case for the turntable, pickup and amplifier may be built of three-ply plywood, obtainable from any lumber-yard, in any design or dimensions wished. However, when finished, it should be portable and so constructed that it can easily be placed on a table or stand

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## FIRE-BOMBS AREN'T THE ONLY SUBJECTS FOR DEFENSE FILMS!

By W. G. CAMPBELL BOSCO

THE recent achievements of some of the more progressive amateurs and amateur clubs in producing pictures to disseminate information vital to effective civilian defense is a pointer to the way in which the talents, equipment and enthusiasm of America's 16 mm. movie-makers, both amateur and professional, can be turned to patriotic purpose. These pictures are of vital interest to all of us, even though we hope we'll never need to put into actual practice the information they convey.

Very naturally, most of these first amateur-made Civil Defense pictures have dealt with the handling of incendiary bombs and the fires they cause. But if you've made one picture on this subject, or found that your local Defense Council didn't feel it needed any films in addition to the incendiary bomb films already available, don't think that this exhausts the possible Civil Defense subjects waiting for your camera! There is a very great need at this time for films on many other subjects which can be genuinely helpful in promoting civilian interest and cooperation in the plans being taken for home defense. Among these less spectacular but needed subjects may be mentioned rescue work, evacuation,

salvage, conservation of all sorts of materials, facilities and resources, and scores of other subjects.

In this job of educating the populace on their wartime duties and responsibilities through the use of 16mm. motion pictures there is a part for both the organized advanced amateur group and the professional 16mm. producer. There's no need for overlapping of effort or coverage, for there will inevitably be some subjects which can best be handled by the amateur—especially where localized treatment is necessary or advisable—and others which will naturally call for the greater skill and facilities of the 16 mm. professional.

Speaking generally, the amateur will do best to confine himself to the making of pictures that require a comparatively simple treatment (usually without synchronous sound, though it will probably be necessary to plan on post-recorded narrative sound), and which can be handled within the limits set by the amateur's camera and lighting equipment. The professional, on the other hand, can tackle the more difficult subjects. Actually, there is no reason why capable 16mm. amateurs and 16mm. professionals in the same region can't work to-

gether to the extent of assigning to each the type of picture best suited to his resources and ability. Today we can all of us afford to place less stress on personal and professional standing, and work together to answer the country's demand for more and better Civil Defense pictures!

First of all, find out what are your community's particular Civil Defense problems and needs. Get in touch with your Defense Council, Red Cross, Salvage Collection Committee, and other agencies. They will tell you what information they most want brought home to your fellow-citizens, and where you can be most useful. Once in a while you may run into the stone wall of petty personal or factional political jealousies; but in most cases, these officials will welcome all the help they can get. They realize that in the event of any emergency, they have a grave responsibility, and they know that their task will be greatly lightened if the public knows beforehand what to do. They'll appreciate it if you can help get their "what to do" message over to the public with a well-made motion picture.

Don't think anything is too simple to merit being detailed in a film. For example, a very useful film that could be made in almost any community would be one to introduce pictorially the neighbors and friends in the community who are quietly serving as Air Raid Wardens, Fire Watchers, and so on. Most of us know that some of our neighbors are doing this work, but the majority of us probably don't know who they are, or where they can be found in an emergency.

The scenes from a film like this should be more than just a "take-a-bow" introduction. They can show as well what the average citizen should do—and what he should *not* do—to best cooperate with his local Defense Officials.

Most of us know that there are emergency first aid stations in almost every community. But very few of us know where they are. Your local Red Cross Chapter, as well as the Defense Council, will certainly welcome your help in making a film on these activities. They'll help you, too, to make a film that will show John Q. Public "what to do till the doctor comes," and again, what *not* to do.

First aid films like these can be made highly detailed and scientific, if you've the inclination and the skill, and even aimed at detailed instruction of specialized groups. Or they can be strictly elemental and aimed simply to teach the general public how to put on a tourniquet and where they'll find their neighborhood first aid post.

Then there is the need for salvage—why we need it, and what is and what is not acceptable in the salvage-collection campaign. In the proper season, there's ample need for films about the importance of growing as much food as possible in Victory Gardens; but we're less likely to realize that there's an equal need for films about the how and why of preserv-

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**T**HERE'S nothing really wrong with the average home movie of children—except the people who try to make the pictures! Left to themselves, children are probably the most completely natural actors in the world. The unnaturalness you see so largely displayed in most 16mm. and 8mm. films of children can be blamed squarely on the fact that the children weren't left enough to themselves.

Most amateurs, when they try to film children, seem to go to one or the other of two extremes. Sometimes they try to direct their young actors so emphatically that they "direct" all the naturalness out of them. In plain English, they confuse or even scare the child. Some, on the other hand, don't direct their subjects at all. That leaves the child in a situation which would be embarrassing enough for an adult, and is almost terrifying to a child: having to ad lib some action—any action—for the camera, with no reason for what they're doing. In either instance, the result on the screen is as different as possible from a really natural picture of that youngster.

The real secret of directing either children or adults is to put them completely at ease, while at the same time persuading them to do what you want them to do. And—equally important—always give them something interesting (and natural!) to do.

It's a far too common fault in all adults to underestimate a child's mental capacity just because he is a child. Yet I've found in both my professional work at the studio and in my own 16mm. movies that if a youngster knows *what* is to be done in a scene, and understands *why*, his natural dramatic sense will enable him to do it, and usually better than any adult could foretell.

Remember, one of the most deep-rooted of all human instincts is the instinct for self-dramatization. In grown-ups, it manifests itself in the legitimate "dressing up" of wearing masquerade costumes and lodge regalia. In children, it finds an almost continuous outlet in the thousand-and-one dramatizations of play. If you've ever watched your own children playing, you must have noticed it: a child very seldom plays himself, but always impersonates some other character—a soldier, an aviator, a cop, a gangster, or, lately "Superman." The wise director is the one who can take advantage of this to make movie-acting a joyous game for the children.

But, on the other hand, don't inject your adult concepts too much into this game! That only cramps the children's style, and leads to a stiffly unnatural picture. For example, we've all known amateurs who dress their children up in miniature adult attire and make them do imitations of adult stories and actions with the mistaken idea that they're "cute." To my mind, this robs the children of their greatest asset—naturalness. It may make them look "cute" (that's debatable, by the way!) but it



## How To Get BETTER MOVIES OF CHILDREN

By NORMAN TAUROG

usually makes them feel ridiculous. They show it on the screen; the picture is almost always stiff and posed.

If you must dress the children up, let them dress up in their own way, and as something that fits in with their natural play. For instance, most youngsters these days go through a phase of playing at being some favorite screen or funny-page hero like "Tarzan" or "Superman." Let them play that—preferably in costumes mostly of their own devising—and you'll get a really enthusiastic performance, and a natural one, as well!

While you're making it clear to the youngsters what they're to do, don't make the mistake of showing them what to do literally. Don't step in and act it out for them. If you do, I've found, you don't get what you want. Instead, you get the child's imitation of *you* doing the part, which will be most unnatural.

Tell your young actors what to do, and then let them figure out their own ways of doing it. And don't try to shove them around into the positions you want. That sort of treatment simply freezes them. If you can't get them into the exact places you've planned, it usually doesn't matter; and it's easier to change your camera-angle than to "loosen up"

a youngster who has been pushed into position.

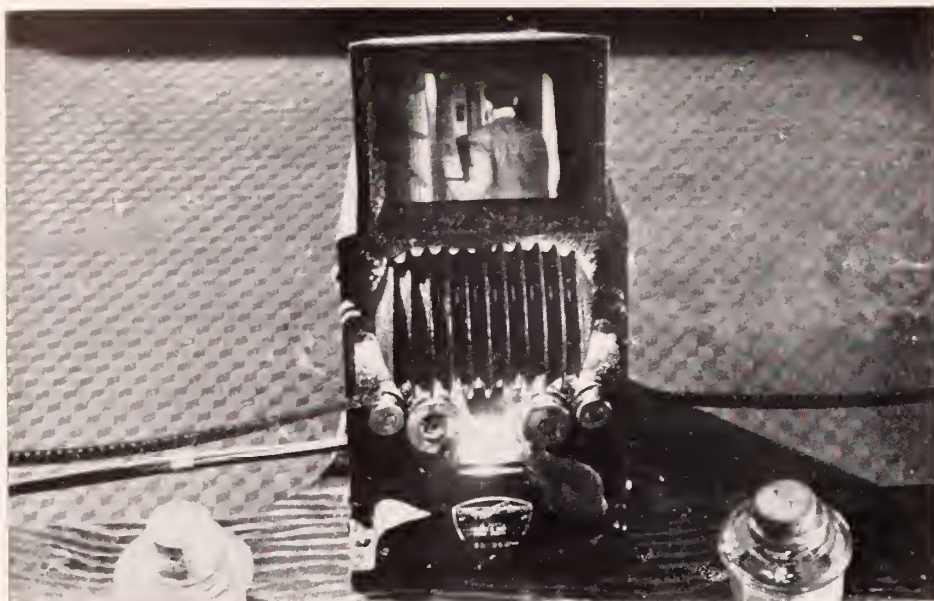
For the same reason, don't let yourself get excited. Keep externally calm, even if you don't feel that way. Even with grown-up, professional actors it's bad business for the director to throw a temperamental tantrum; with children, it's fatal. Once you've lost your temper, you might just as well stop shooting for the day, for with a cast of nervous children, you'll certainly get nothing worthwhile—and film, these days, is something not to be wasted!

Even with adult actors, too much rehearsing tends to rub away the spontaneity. With children, it rubs off the sugar-coating of "let's play a game" that you've tried to give the task of movie-making. My advice is to content yourself with one or, in extreme cases, maybe two rehearsals, and then shoot, while the children still feel it's a game.

Up to a certain age, most children are practically oblivious of the camera. Then they suddenly become aware of it. And there's nothing more unnatural than a camera-conscious child. If you have a telephoto lens, you have the answer to this problem, however, for you can get

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Study the action on a viewer until you can match the frames in a cut.

## Are Your Pictures PRECISION EDITED—?

By ROBERT PITTACK, A. S. C.

**Y**OU may think your pictures are completely edited. But—are they?

Judged by the standards of studio film-craftsmen, the average amateur movie, which its maker proudly considers completely edited, is only in the "rough-cut" form. It doesn't flow along on the screen with the smoothness of a really completely edited picture; there are overlaps of action at the beginnings and ends of scenes; there are little tags of unwanted action at the start or finish of other scenes; and there may even be scenes—usually scenic shots—which are repetitious, or which aren't arranged in the best order.

Remedying these little faults will put the final polish of perfection on any picture, new or old. It's painstaking, detail work, though, and usually involves thinking of cuts in terms of inches or even frames, rather than in feet or complete scenes. It isn't easy; but this "precision editing" is one of the most important things in turning out a really good picture.

The chief tool you'll need in tackling a job of "precision editing" is a good viewer, preferably of the motion-image type. In a pinch, you can use a projector and a small screen if your projector is one capable of projecting both forward and backward, but a viewer lets you do the job much easier and more accurately.

In addition to the viewer, you'll need a really good splicer—and plenty of patience.

The first step is to project the picture once or twice, carefully watching for these little blemishes. Unless you've a good memory, you'd better make notes on each as you come to it.

What are the points to watch for? Well, first I'd watch for little points at the beginning or end of scenes where you may have exposed six or eight frames (sometimes less) of a scene before or after the really important action took place. Even a two-frame flash like that can be irritating on the screen. Sometimes you'll start a take and im-

mediately remember that your focus or lens wasn't set correctly, or discover that the action isn't right, or even that you forgot to wind the camera. Anyway, there you are with a few frames of the picture recorded on the same spot, but not actually your real scene.

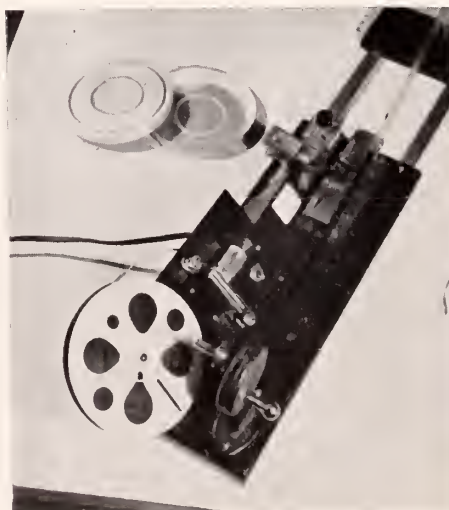
Or you may find that when you cut from one camera-angle to another, your action overlaps. No—there's nothing wrong with shooting your scenes that way: in fact, it's the correct thing to do, for it gives you a better chance to match the action of the two in cutting them together. But all too many amateurs forget the importance of precision-cutting the action when they join the two scenes.

As an example, a very common action in both amateur and professional pictures is a shot of someone going through a door. Often we'll show it in two successive cuts: one made from the inside of the door as the person (back to the camera) approaches it, opens it and walks through, and the other made from the other side of the door as the actor, now facing the camera, opens the door and walks through into the next room.

It should be rather obvious that we don't want to splice these two scenes together without any cutting. If we did, we'd show the person walking through the door, then apparently jumping back, reopening it, and walking through again. But many amateurs don't realize that it is almost as bad if in cuts like this the action jumps forward or backward only a few frames. On the screen, it makes a little mental jolt which—if for only a few seconds—jerks the audience's attention away from what's happening on the screen, and intrudes an irritating consciousness of the mechanics of the job.

Here's where the viewer proves its worth. By running first one scene and then the other through the viewer successively—and preferably slowly—you

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A spindle to carry an extra reel, like this one made by Sgt. Bob Teorey of the L. A. 8mm. Club, is useful in accurately matching scenes to be intercut.



# FILM CONSERVATION and SUBSTANDARD FILM

**D**URING the last few weeks we have received many inquiries from individual amateurs, from amateur clubs, and from 16mm. professionals, asking what is the effect upon substandard film and filming of the recent Government Order "freezing" motion picture film. We feel that our readers are entitled to a frank statement of the facts, based on the most authentic information we have been able to obtain up to the time of going to press.

The present order "freezing" motion picture film, and the rationing procedure announced as shortly forthcoming, apply solely to 35mm. motion picture film. The text of the order specifically excludes 35mm. film packaged for miniature still cameras, and makes no mention of 16mm. and 8mm. film.

We are informed that a substantial cut has been made in the amount of substandard film delivered by the manufacturers for sale through the normal channels. But up to the time of this writing, there has been no indication either from Government sources or from the film manufacturers that 16mm. and 8mm. film is to be "frozen" or rationed. There will be less of it available than heretofore, but it will still be available through the usual channels.

There is therefore absolutely no reason why any user of 16mm. or 8mm. film, whether amateur or professional, should attempt to lay in an undue supply of film against the possibility that it may be rationed or become unavailable. Indeed, such hoarding is to be strongly condemned. Not only is any widespread hoarding of substandard film at least potentially likely to bring about the restrictions we all wish to escape: it is definitely wasteful, for film that is kept over-long deteriorates, and in time becomes worthless.

We do not personally believe that the Government or any of its officials or agencies have any bias against the amateur film hobby, or any wish to kill it off by unnecessary restrictions on the availability of film. Indeed, many of our high Government officials are known to be enthusiastic cine-amateurs in their private lives, and may be expected to look favorably upon the hobby.

There is, however, a definite reason for the present "freezing" of 35mm. film, for the restricted output of substandard film, and for any rationing or restrictions on the sale or use of substandard film which might conceivably come in the future. We are convinced that once the amateurs and 16mm. professionals

of America appreciate those reasons, they will gladly cooperate in any measures which are or may be taken for those reasons.

Our country is at war. In that war, a greater and more widespread use is being made of motion pictures than ever before in history. Our Army is expanding incredibly, growing almost overnight from a peacetime token force of a couple of hundred thousand to a wartime army of millions. Our Navy, Marine Corps and other services are expanding similarly. This means that literally millions of our fellow-citizens must be trained, and trained efficiently and rapidly, from civilians to first-class fighting men, in less time than any other nation ever attempted such a mobilization.

As we have brought out in this magazine on numerous occasions during the past year and a half, a very great part of this training is being expedited by motion pictures. The Army, the Air Force, the Navy and the Marine Corps are making hundreds of training films in their own training film studios; the motion picture industry is making hundreds more for them. Literally thousands of release-prints of these training films are being made so that trainees in all of our far-flung military training establishments may have the advantages of the same expert instruction.

These films are being photographed principally in 35mm. but virtually all of the release-prints are being made in 16mm., for obvious reasons. In addition, virtually all of the Armed Services are using motion pictures, both 35mm. and 16mm. (including Kodachrome) for purposes of research, record, and combat camerawork.

This means that the film-producing facilities of this country have to face an absolutely unprecedented demand for motion picture film. Those facilities, as we all know, are tremendous. They would have to be to meet the professional industry's 2,000,000,000-feet-per-year annual requirements, and in addition cope with the constantly increasing demands of the substandard professional and amateur fields.

As we understand the situation, the manufacturers give no indication that there is any shortage in the raw materials for making film. But there exists a serious bottleneck in film-coating capacity. Film-coating machines are intricate, expensive, and exceedingly slow to get into production: it takes over a year from the time one is first planned to the

time it is coating film on a production basis. In addition, each such machine uses a considerable amount of critical materials, not to mention precision machine-work and manpower.

The crux of the situation, then, is that present film-coating capacity can handle the country's normal peacetime demands for film, and it can handle the enormous military demands: but it cannot do both at once.

Obviously, the needs of the military must come first, for if any shortage of film developed in that direction it might slow the training programs of our Armed Services, or result in the serious crime of sending American soldiers into action less completely trained than they might have been.

The professional motion picture industry, as the world's greatest institution for mass entertaining and morale-building, is rightly regarded as essential. But it must and is willingly taking second place to the needs of the Armed Services.

Makers of 16mm. industrial training films, Civil Defense subjects, and the like, are certainly performing an important service to the nation. The amateurs, as long as they use their film and cameras wisely, can play an important part both in disseminating useful information and in keeping up morale along the most literal home front. It is only fair that these users of substandard film should get their film, but they must naturally yield precedence to the more directly essential users of film.

None of us can predict what may come. If the government officials whose fingers are on the ebb and flow of supplies deem it necessary, curtailments and restrictions of substandard film will come, and come swiftly. But we have an idea that the matter really rests with the users of substandard film themselves: if they use their film wisely and conservatively, and avoid unnecessary hoarding, cheerfully accepting the necessarily reduced output of 16mm. and 8mm. film, they should be able to continue their hobby for quite a while—perhaps even "for duration." If they don't—if they as a whole or any small part of the whole should unnecessarily deplete the country's supply of substandard film just from panic—we may expect the proper authorities to take such steps as are necessary to protect the Nation's best interests.

So—for the present, our hobby is in no danger. Let's keep our heads and face the future like Americans! **END.**





How would you set the focus to get the girl's face sharp in a scene like this?

# Test YOUR Movie Knowledge!

A Cine-Quiz, Edited by  
ORMAL I. SPRUNGMAN

**I**NCREASING popularity of quiz programs inspired Ralph Sprungman, retiring president of the Minneapolis Cine Club, to compile a question-answer quiz for one of the club's recent programs. Here are 25 of the tougher ones. If you're a cine filmer, try your hand at these, then turn to page 420 for correct answers and rate yourself as a movie-maker as follows:

21-25: Topnotcher  
16-20: Well advanced  
11-15: Average  
Below 10: Beginner

- 1. Which of the following are known as substandard movie cameras?
  - a. 8mm.
  - b. 16mm.
  - c. 35mm.
- 2. An overexposure in outdoor photography is the result of:
  - a. Too much light.
  - b. Too little light.
  - c. No light at all.

- 3. In photography, blinds are used to:
  - a. Prevent films from being light-struck.
  - b. Protect cameramen from being charged by wild game.
  - c. Hide the cameraman from his quarry.
- 4. When a heavy filter is used over the lens in photography:
  - a. Exposure must be decreased.
  - b. Exposure must be increased.
  - c. Make no change in exposure.
- 5. Movie titles are essential to every silent film. These should be cut into the movie:
  - a. At the beginning of a sequence.
  - b. At the end of the sequence.
  - c. Anywhere the title happens to fit.

The following true-false questions may be answered by simply marking *T* or *F*.

- 6. Depth of field is affected by exposure regulated by diaphragm opening.

- 7. To make silhouettes, expose for the darkest part of the scene and deliberately overexpose the lighter parts.
- 8. When using a wide-angle lens, all objects appear larger than when using the standard lens at the same distance.
- 9. When filming objects reflected in a mirror, measure the distance from lens to mirror.
- 10. A movie camera should record action rather than provide it.
- 11. Outdoor Kodachrome film cannot be used indoors satisfactorily.
- 12. There are 80 individual frames on each foot of 8mm. film.
- 13. When splicing duplicate film into original film, the emulsion sides must be away from each other.
- 14. All objects reflect the same amount of light under the same kind of sky.
- 15. In projecting 8mm. and 16mm. reversal films, the emulsion side must face the projection lamp.
- 16. Some telephoto lenses may be used for extreme close-up work as well as bringing in distant objects.
- 17. A pola-screen has no effect when shooting away from or directly into the sun.
- 18. 8mm. and 16mm. film require different exposure rates.
- 19. Framing not only adds contrast to scenes but helps to give the picture greater depth.
- 20. Early morning or late afternoon filming often results in under-exposure.
- 21. Subjects taken against a light background are most frequently overexposed.
- 22. A  $f:3.5$  lens is not as efficient as a  $f:1.9$  set at  $f:3.5$ .
- 23. The best human close-ups are made in the shade where plenty of light is available and persons are not subjected to direct intense sunlight.
- 24. Increasing the focal length of a lens increases the field of vision.
- 25. A focusing camera can be used as a fixed focus by setting distance at 25 ft. and using a small stop.



# Take Your Camera To School!

By PHIL TANNURA, A.S.C.

**I**N this day of visual education, there's a definite place in almost every school from kindergarten to college for a well used movie camera. Supplementing the professionally-made educational reels that are a part of every school curriculum, personalized films that record in detail the progress of the various practical projects of different groups or classes, or of the school itself, have real value both as educational aids and as lasting records of accomplishment.

School budgets being the slim things they are, though, very few schools can boast a camera or an "official" cameraman among the regular facilities. But—there's no reason why a cineminded parent, teacher, or even a movie-making pupil can't volunteer his services as the school's semi-official camera reporter for the coming school year. I've known of several who have done it very successfully, and in the process found a new world of interesting (and sometimes technically perplexing) movie-making subjects.

You'll very probably have to exercise more than a little diplomacy getting started, though. Schoolteachers and principals usually have to keep a wary eye out for criticism, sometimes from old-fashioned parents of their pupils, sometimes from particularly conservative souls among their superiors, every time they depart from the straitly-outlined path of the three R's and seek to try any innovation. But once you manage to "sell" them on the idea and on your own ability to stay with the project and deliver a worthwhile picture, you'll find most pedagogues warmly—if not always camera-mindedly—cooperative. During this "selling" process it's not a bad idea, by the way, to point out to teachers and principals the personal prestige they'll get among their associates by being the teacher in such-and-such school who made a movie of that particular project!

More often than not, you'll find you'll have to provide the film yourself, though some schools may have a budgetary set-up which would permit them to provide the film, or at least split the load with you. And if, when the project is finished, you find you've a film you'd like to keep, it's essential to give the school a chance to buy a dupe of it. They usually have provisions for buying films to add to their visual education libraries, and can "cheat" a bit to permit buying a print of their own picture.

Once these details are arranged, you'll find plenty of material to shoot, no matter whether your filming-ground is a primary school, a high-school, or a university. In fact, you'll have to choose carefully which projects you *can* film, instead of trying to film everything that is going on.

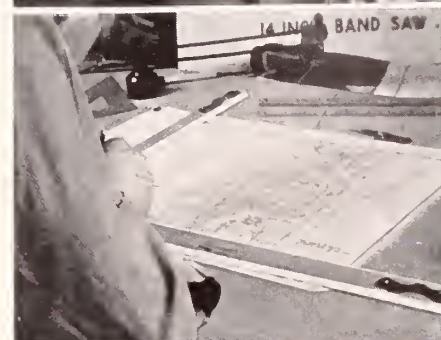
As a rule, I think the best idea is to pick one particular project, and stick with it consistently enough so that you'll be able to make a complete filmic record of the project from start to completion. This will almost certainly mean you'll have to keep yourself as ready as a fire-horse, so that you can dash out to the school and film a needed scene when it's happening. You won't get many opportunities to "stage" things on your own time!

One of my friends, for example, got interested in making school-film records of this sort while his children were in school, and became so wrapped up in it that he got into the habit of keeping his camera, loaded, in his office so that whenever he got a call from the teacher, he could drop everything, grab his camera, and dash out to shoot while the shooting was good!

The best subjects, I think, are those where the pupils are doing (in the physical sense) something constructive. In the early primary grades, for example, modern teachers teach many subjects by having the children actually make and do things connected with that subject. For instance, if they're studying about Indians, they may make themselves Indian bead-work, and stage Indian ceremonial pageants. If they're studying about pilgrim or colonial days, they spend several weeks, perhaps, at various types of early American handicrafts, and so on. All of these are fine movie subjects, especially if you do a complete job of coverage, so that you show the project from start to finish.

In the higher grades, there are more definite handicrafts. Particularly at present, thousands of school manual-training classes instead of turning out footstools and bread-boards which may or may not be useful at home, are making scale-model airplanes to aid the Army and Civilian Defense programs of training soldiers and civilian spotters in aircraft identification.

In the high-schools (not forgetting, I hope, the many night extension high-schools for adult education) there are



A school movie should have plenty of intimate shots showing what the students are doing, also shots of instructor and pupils, and class reaction shots. Upper four photos, frame enlargements by Anthony Cope and John Borza.

particularly fine possibilities right now in the many classes in shop and business subjects which are preparing students, both adolescents and adults, for service in our wartime armament and allied industries.

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## SHOOT THE LITTLE "BIG GAMES"

By HENRY SHARP' A. S. C.

**F**IRST-GLANCE indications are that this wartime football season is likely to be a slim one for camera-toting football fans in many parts of the country. Necessary military restrictions in many areas drastically limit the size of crowds, so it is not at all certain whether Mr. Average Filmer will even get a chance to get into the stadium. In all sections, draft and enlistment have played havoc among college football squads; surprisingly many of last year's "name" players won't be playing this year. Instead, they'll be carrying the ball in tanks and Flying Fortresses.

But that doesn't mean you won't have a chance at football filming. In fact, if you play your cards right, you may find you can do more of it than ever before, and get the sort of pictures you've wished for, but never before been able to get.

There's a string attached to it, though. You may have to forget the pursuit of big-time teams and "name" players, and devote yourself instead to getting action pictures of football for the sake of football!

In other words, if you can't get into the usual big games, take a try at filming the little "big games"—the high-school and prep-school games that only rate a paragraph or so on the back pages of the sports sections. Most of them, you'll find, pack more genuine action and football thrills into their playing time than you'll find in a dozen bigger games. Except in the bigger cities, these teams aren't scouted as exhaustively as college teams are, so they don't know each other's every play before it happens. There's less conservative playing than is often the case in big-team contests, where so much hangs

on victory. And enthusiasm—the "old college try" is but a pale shadow of the zeal you'll see expended on every play in these little "big games."

From the photographer's viewpoint, there are other distinct advantages. The crowds at these high-school games—especially away from our bigger cities—are usually smaller, and much more informal. If you ask permission in the right quarters, you're very likely to have the privilege of setting up your camera right on the sidelines, rather than having to content yourself with a seat half a mile or so up the side of a big bowl.

This directly simplifies your photographic problems. You won't have to use a telephoto lens, for one thing. Very few of us have telephotos powerful enough to meet all the requirements of big-stadium cinematography, anyway. But shooting from the sidelines, you can use your normal lens, or even a wide-angle or a Hyper-Cinor, if you have one.

If you've a wide-angle objective, your focus problems will be nil. If you haven't one, I'd suggest using the normal lens on your camera as a fixed-focus objective. Set the focus at the 25-foot mark, and when you're stopped down to the aperture you'll usually use outdoors on a bright autumn day you'll find the 25mm. lens of a 16mm. camera will carry from about 5½ feet to infinity, while the 12½mm. lens of an "eight" will do even more than that. No, you won't have to worry about focus! Exposure-metering problems are easier, too, when you're working at normal distances.

Following the action is another matter. Working from ground-level on the sidelines, your best bet is to hold the camera in your hand, so that you can follow the

play up and down the field just as the linesmen do. When the play is out toward the center of the field, or over on the other side, get as nearly on the line of scrimmage as you can. When the play comes over to your side of the field, step back a yard or so from the sidelines, and place yourself three or four yards or more ahead of the play—that is, behind the defending team. When the play gets into that critical territory down by the goal-line, a position right along the goal-line is usually best: that way, your shot will tell accurately whether or not the ball went over the line. When goals are to be kicked, or you've a suspicion that a place-kick is coming up, a shot made from behind the goal-posts may be very effective. But don't get too close, or you may find yourself overwhelmed by an avalanche of football players!

That, by the way, applies also to positions on the sidelines when the play is toward your side. Be prepared to jump—and fast—in the event a ball-carrier is forced out of bounds in your vicinity.

Working from the ground level this way, your best bet usually is to shoot from a standing eye-level, which gives you the best perspective on the play. Once in a rare while you may want to kneel for a low-angle shot when the play is coming close to you; but don't do it often, for such angles won't give a very good idea of the play itself, and besides, it's too hard to jump clear from a kneeling position if you have to get out of the way quickly!

Speaking generally, your best bet is to follow the ball as consistently as you can. This is easy on passes and kicks, but sometimes on running plays—especially fake reverses and the like—you may get fooled. A wide-angle lens, which lets you get practically the whole play into your frame, is a life-saver here.

When you see that one team is particularly lucky with its passing game, it's well worth while to drop behind the offensive team for a few shots that will show how they protect the passer, and then to make a few more from down the field, showing how the receivers get down there, and how they are protected. Similarly, I think that on shots of long runs, your picture will have much more interest if your camera-angle is wide enough to show the work of the interferers, rather than concentrating, via telephoto, on the ball-carrier.

In any event, you'll have to develop that instinct that all good sports-camera-men have, of diagnosing the play rapidly, and adapting your camerawork to it. Using a normal or wide-angle lens of course helps in this, because you'll usually have the whole play in your field, and won't have to follow so much.

Since your camera is hand-held—and it's got to be if you're to move rapidly up and down the sidelines with the play—you'll usually do well to shoot at 24-frame speed instead of 16, to minimize the unsteadiness that can't be separated from hand-held camerawork. Once in a while a faster slow-motion may be in-

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**I**N most parts of the country, the autumn months are the most colorful of the year. The changing reds, oranges and yellows of the autumnal foliage are a constant invitation to expose Kodachrome. People talk about "spring fever"—but it's nothing compared to the urge that comes in the fall to most cinefilmmers to take their cameras out in the country and shoot for autumnal color!

But this year things are different. Tires are scarce and gasoline, in many regions, even scarcer. The riotous fall colorings may still be there—so is the urge to shoot them—but the usual means of getting out there is likely to be sitting in the garage in storage.

However, that still needn't keep us from taking cinematic advantage of these colorful subjects. Only—we've got to change our technique one way or another.

One way to do this to to change our method of getting to our cinematic stamping-grounds; another is to change our stamping-grounds. It may seem surprising to many of us who have habitually used the family car even to go to the corner store for a packet of smokes, but there are such things as street-cars, interurbans and busses. And they're still running. Often they'll take us at least to within striking distance of pictorially worthwhile countrysides.

Similarly, we hear a lot about railroad transportation shortages, but these seldom exist on the little branch lines. And these little-travelled branch lines are just the ones most likely to take us out into the kind of shooting country we want to reach! Even in such a thoroughly metropolitan area as that around New York City, you can discover several dozen of these little branch-line trains which can take you in an hour or so out into such rural placidity that you realize "Forty-five Minutes from Broadway" can be a lot more than just a song. I won't say you'll find the "Reubens" George M. Cohan sang about, but you'll find rural subjects that will delight your eye and keep your camera going as long as you've an inch of unexposed Kodachrome left. If you don't believe me, just study up a bit on the little branch-line trains in the timetable, and spend a holiday or so learning where they go!

If you can't leave the city, there are always the parks, to say nothing of the more familiar tree-shaded thoroughfares. And a touch of autumnal color can transform even the most familiar scene into something seemingly new and decidedly worth filming.

You could make a very interesting picture, for that matter, centering around the coming of autumn to your own neighborhood. It's still early enough so you can get an opening sequence showing the neighborhood foliage still in its early-fall greenery. Then show the first touches of fall colorings, using both long-shots and close-ups, and of course taking due care to contrast the trees with colored foliage against those as yet



## AUTUMN BYWAYS— IN COLOR

By SID HICKOX, A.S.C.

unchanged. Carry this through as more and more trees and shrubs put on their autumn clothes. For human interest, you can build up little sequences showing the neighborhood children getting ready for school, and starting in again at their classes and homework. Sequences of the wife getting or making her fall outfit, and of father laying in the winter's supply of coal are "naturals," too. These human sequences should naturally be punctuated with scenes of the increasing spread of fall coloring.

Then might come the first falling leaves, followed by shots of the neighborhood lawns carpeted with red, yellow and brown leaves, shots of father spending his Saturday afternoon raking them carefully up, and finally burning them.

The picture could well conclude with scenes showing the coming of the first really biting autumn winds and, if you're lucky, the first snowfall, perhaps lap-dissolving into a shot made much later, showing the neighborhood at last in the snowy grip of winter.

This, by the way, suggests several ideas which would be highly effective on the screen if you've the patience and persistence necessary to work them out accurately. For example, a series of lap-dissolved shots of the same tree, or the same neighborhood, or even of your home going through the transition from early fall's greenery through the varied colorings of autumn to the stage of dropping leaves, bare branches and finally soft, white snow, would be extremely effective.

You could make a sequence like this easily enough without tying up your camera, too. Simply mark a starting-point at the beginning of the roll, and measure and record the footage of leader, and of each scene and dissolve thereafter. Each time you finish a scene, take the camera into a darkroom and care-

fully rewind the film, so that you can shoot other pictures on other rolls until the time comes to film the next shot in your lap-dissolved sequence. Then, of course, thread the camera with the marked starting-point in place, and run the film through with the lens capped until you've run off the footage that will bring you to the point where you stopped shooting on the last take. Back in the old days, I've known professionals who, making a sequence like this, held their film for more than six months, making each partial exposure as the opportunity presented itself.

It will help, too, if you use a tripod for these scenes, and mark the exact position of the tripod with pegs driven into the ground. Thereafter, you can get the camera very accurately back in place by lining up the tripod-legs with these pegs, and of course measuring the height of the lens from the ground, so that it stays the same.

The general technical treatment of autumn scenes in Kodachrome is simple. Wherever possible, frame your compositions so you can take advantage of color contrasts to give you interest and depth. Contrasting a brilliantly red or yellow-leaved tree against a nearby one with dark-green leaves is always effective.

Since you have color-contrasts to help you out, you won't need to make as much use of lighting contrasts as you would ordinarily. Simple flat and cross-lightings are all you'll need most of the time. However, occasional back-lighted shots—especially of trees with light yellow leaves—can be tremendously effective. So, too, can close-ups of individual leaves.

If you're a real master of exposure-metering, you can accentuate some of these effects to good dramatic purpose. Begin the picture with normal exposure.

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# PLANNED PROJECTION PAYS!

By THOMAS TUTWILER, A. S. C.

**N**OW that a new season of movie-club meetings is beginning, it seems like a good time to give some serious thought to the matter of projection, for more than almost anything else, the way a picture is projected can make or mar the impression it makes on its audience. Haphazard projection of the "let's-set-up-the-projector-and-run-some-movies" type may be all right when one or two movie-making cronies gather informally at home to preview someone's latest reel, but at movie-club meetings, whether or not they're open to outsiders, projection should be handled as expertly as any other phase of the movie hobby.

This, by the way, gives me a meaty bone to pick with a lot of movie-club presidents. I'd like to know why it is that when incoming presidents get around to appointing the projection committee, they so often seem to appoint members—often new ones—who may have lots of enthusiasm, but darn little knowledge of how to work a projector? Believe it or not, I've really known of at least one case where it was found that a club's newly-appointed projectionist was so new at the hobby he didn't even *own* a projector—much less know how to run one! As I look at it, the post of projectionist is one of the most responsible in any movie club, for the projectionist is not only responsible for the smoothness with which the show goes off, but he stands a fair chance, if he doesn't know his business, of ruining irreplaceable film. Certainly, it's no job for a greenhorn.

The projectionist ought to be one of the first arrivals at a meeting, so he can get his projectors, screen, and sound-equipment (if any) set up and ready to

go well before the meeting starts. Nothing so detracts from the smoothness of a meeting than to have the equipment set up, adjusted, and generally fiddled with while the audience waits embarrassedly for the pictures to start.

The ideal arrangement is to have at least two projectors (four, if both 8mm. and 16mm. are on the same programme) so that you can switch over from one machine to the next, and from one reel or picture to the next, without a break. The projectors should be pretty well matched as to optical quality, illuminating power and silence, too. Showing one reel on a 300-Watt machine and the next one on a 750-Watt one puts the film shown on the low-powered machine at an unfair disadvantage.

Changing over smoothly from one machine to another isn't difficult. Simply thread the film into the second machine with the starting frame or main title in the aperture, and set that projector with the lamp-switch on and the motor-switch or main switch off. Then when you see the end of the first reel approaching, you can flip No. 1 projector's lamp-switch off with one hand while at the same moment you flip the second projector's master-switch on with the other hand. The first projector's motor can keep running, to run out the trailing leader on the reel.

The projectors should be placed on a firm stand or table, behind the audience, if possible, and a bit above the level of their heads. If you can build a projection-booth like the one described a few months ago in this magazine, you'll have the perfect projection set-up. Otherwise, try if possible to get a fairly long, narrow stand or table, and place it parallel to the screen, so you can

line the projectors along it with plenty of working-space between them.

Be sure to give yourself plenty of free working-space. Make it a habit, too, to put the un-projected reels in one place, and the reels you've projected in a different location, so you won't stand any chance of mixing them up. I think it's a good idea, by the way, when you thread a reel into the projector, to make it a habit to put the can that reel came from in the pile of projected film. If you've more than one projector, plan which reel goes on which projector so that you can arrange the film for each projector in a separate pile, by its appropriate projector. This again saves mix-ups.

Of course it isn't always possible to plan a club's programme too rigidly beforehand, thanks to the inevitable members who promise to bring a film and then forget it, and their near relatives, the people who bring along an unexpected reel and feel hurt if you can't crowd it into an over-filled evening's show. But wherever possible, it will help everybody if a written—or, better, typewritten—list of the films to be shown, and their order, can be provided for the projectionists and the member( if any) who accompanies the pictures from the record turntable sound outfit. The sound man should have one, anyway, even if it's only a scrawled memo, for there's nothing more difficult than to be expected to produce appropriate music for a picture when you haven't even a hint as to what sort of a film it may be.

Rewinding should usually be handled by another person than the projectionist. We've all gotten pretty well in the

(Continued on Page 418)



A power-driven rewind like this can be made out of an old fan-motor, and is a great help in smoothing club screenings. Above: leave plenty of working-space around the projectors!



# AMONG THE MOVIE CLUBS

## 16mm. Films for Army Camps

To all Readers of  
THE AMERICAN CINEMATOGRAPHER:

The War Department, Services of Supply, contemplates the development of a visual education program for soldiers in the Army camps.

To prepare this program the War Department has need of up-to-date 16mm. films showing the geography, economic and industrial development, arts and recreation, and the home and community life of the people of countries outside the continental United States.

The War Department wishes to locate individuals who have good 16mm. films on foreign countries. If any subscribers have, or know about, material of this type which could be made available to the War Department, they should write directly to the office of Brigadier General F. H. Osborn, Director, Special Service Division, War Department, Washington, D. C. In writing to him please refer to the fact that you saw this notice in THE AMERICAN CINEMATOGRAPHER.

## Exchanges for Syracuse

Screen fare at the Garden-party August meeting of the Syracuse Movie Makers' Association featured an all-exchange program. The pictures shown included "Happy Landing," a sprightly Kodachrome scenario film loaned by Past-President Mildred Caldwell of the Long Beach (Cal.) Cinema Club; "New Hampshire on Parade," International prize-winner loaned by Fred Ells of the Los Angeles Cinema Club, and "Prize Winner" and "Chronicle," from the library of THE AMERICAN CINEMATOGRAPHER. The members were particularly impressed with Mrs. Caldwell's use of Kodachrome for her scenario picture, and the way her story logically introduced points of interest of her home town.

D. LISLE CONWAY,  
President.

## Joint Party in California

Five Southern California Clubs staged a joint meeting on August 3rd at the Sequoia Lodge of the Bohemian Distributing Company in Los Angeles. Represented in the turn-out of over 200 were the Los Angeles Cinema Club, the La Casa Moviemakers of Alhambra, the North Hollywood Cine Club, and the Long Beach Cinema Club. The program included tours through the Acme brewery followed by a bounteous "snack" lunch. Screen fare included "Behind the Bale," a Kodachrome sound film on the



Honors for Past-Presies! The Minneapolis Cine Club recently presented each of the past presidents who have served during the club's seven-year career an individual gavel, bearing his nameplate. The gavels were turned out in the home workshop of Rome Riebeth, Editor of the group's organ, "The Cine Clubber." Left to right in picture are Past-Presidents Harold Bronson, Carroll Michener, Carroll Davidson, Leslie Olsen and W. R. Everett. Not shown are retiring president Ralph Sprungman, and Falconer Thomas, incumbent. Photo by Ormal I. Springman.

growing of hops, loaned by Paul Thompson, of Yakima, Wash.; "The Picnic Pest," an 8mm. production by the North Hollywood Cine Club, and a special showing of the Long Beach Cinema Club's Kodachrome sound film on Incendiary bombs, "Fire from the Skies." The meeting proved one of the most enjoyable ever held by any of the participating groups.

## Four a Month for Chicago

Resuming Club activities with its first meeting of the season, September 3, the Chicago Cinema Club has voted to revert to its original policy of holding four meetings per month. Scheduled for September gatherings are two Kodachrome sound films, "This Amazing America," and "Citizens of Tomorrow," as well as another interesting talk by Joe Stout and Dr. H. Eugene Wells' "Fascinating Florida."

## Sound Editing for 8-16

Highlight of the August meeting of the 8-16 Movie Club of Philadelphia was a talk on editing a 16mm. commercial sound-film by George Burnwood. The Board of Experts' popular question-and-answer session was repeated by popular demand. Screen feature of the evening was a screening of General Motors' 16mm. Kodachrome sound-film on "India."

A special recording was made to send to the Syracuse Movie Makers, thanking them for sending "Henry's Hobby" and "The Haunted School," which were shown at the 8-16 Club's July meeting, and recording various members' impressions of these films. The meeting wound up with the showing of members' films, including some shot at the Club's Willow Grove outing.

On Sunday, August 23rd, the Club participated in a picnic held at the Valley Green section of the Wissahickon. A special script was prepared for filming on this occasion.

LEON MERROW.

## Thrills for San Francisco

Thrills highlighted the August meeting of the Cinema Club of San Francisco. Feature of the evening was a screening of a 16mm. print of "Target for Tonight," the famous film made by the Bomber Command of the R.A.F. "Cruising the Grand Canyon Rapids," depicting a thrill trip down the Grand Canyon in a small boat, was also shown, and Member Jack Winkel's 8mm. Kodachrome of the Ice Follies, with disc accompaniment, had its premiere.

E. L. SARGEANT,  
President.

## S. A. for Southern Cinema

Special feature of the August meeting of the Southern Cinema Club was a screening of a 16mm. film made in South America some years ago by a missionary doctor who had access to many places far from the beaten path of camera-carrying tourists. A discussion was held on the topic of making a Club Movie, as the film shown by the San Francisco Club at the July meeting has stimulated a great interest in Club filming.

RUTH FISHER,  
Secretary.

## Family Night for Long Beach

August 5th was "Family Night" for members of the Long Beach Cinema Club. Family films were the screen fare, and proved interesting and in some cases unusual. The August 19th meeting was held at Past-President Mildred Caldwell's new projection-room, and was highlighted by the making of 16mm. sound-film shots of the members present, using Clarence Aldrich's new RCA sound camera, and with Pat Rafferty acting as Emcee. Plans were also discussed for a Club picnic at which another Club production will be filmed.

PRUDENCE BRAKLOW,  
Secretary.



16  
MM

## BUSINESS MOVIES

### Correction!

A very interesting letter from F. Balkin of the Chicago Film Laboratory, Inc., very pleasantly reminds us that in our review of the Caterpillar Tractor Company's most recent film in the last issue of this magazine, we inadvertently gave the title incorrectly. The film is properly titled "Forward for Freedom." We sincerely apologize for the slip, which was due to confusing the title of the film with that of a new booklet just published by the Caterpillar organization.

The letter further takes us to task for our apparent bias in favor of direct-16mm. for commercial films as compared to reductions of sound and picture from 35mm. originals, and points out that the film in question was a reduction-print, both as to sound and picture, made in their laboratory.

We cheerfully admit to the bias in favor of 16mm., the reason being strictly what we have seen and heard from the screen. To put it bluntly, the great majority of reduction-prints we have screened have been so decidedly inferior to direct-16mm. at its best, both as to sound-quality and often picture-quality as well, that we feel justified in considering that the direct-16mm. is generally preferable.

That this print showed such exceptionally excellent sound and picture quality as to convince not only our reviewer, but also several expert 16mm. sound-engineers with whom we projected it, that it was direct-16 rather than a reduction, seems certainly a great compliment to the skill of the Chicago Laboratory's recording engineers and laboratory experts who were responsible for the achievement. We certainly look forward to screening more of this organization's work.

#### CITIZENS OF TOMORROW

Documentary, 1000 feet Kodachrome, sound.

Presented by the Catholic Youth Organization.

Produced and photographed by Dr. Richard A. Chesrow.

Recording and Kodachrome duping by Geo. W. Colburn Laboratory.

Any picture which attempts to show, as this one does, a cross-section of the diversified children's welfare work done by an organization like Chicago's West Side Community Center, is tackling a subject almost too broad for one film. "Citizens of Tomorrow" attempts this with really surprising success. It conveys, though at times more sketchily than one could wish, an excellent impression of what this institution is doing for these future citizens.

This strictly factual treatment of the

subject is well enough, but when the subject, like this one, deals with human values, we can't help favoring a more personalized approach. A picture telling the story of how this center contacts one underprivileged child, or perhaps one boy and one girl, and helps feed, educate and care for them until finally they are ready to take their places in society, would be even more compelling propaganda in behalf of the institution and its work. It is to be hoped that Dr. Chesrow will some day make that picture, for the story is there, waiting for his camera.

As regards the technical aspects of "Citizens of Tomorrow," Dr. Chesrow seems to have done a decidedly praiseworthy job. His lighting problems in the big kitchens, dining-halls and other rooms of the building must necessarily have been considerable. Here and there, this limitation is evidenced in the falling off in exposure-values toward the background of long-shots; but in most cases, he has wisely covered this technical shortcoming by the generous use of close-ups. His work on the exteriors is good, though a slightly fuller exposure would have made for better quality in the duplicate print. His compositions are often quite effective.

The film would benefit decidedly by closer cutting; often there is distractingly incomplete action at the end of a scene, which would very well be eliminated. Here and there in the closing sequences showing the activities of the Scout camps, Dr. Chesrow's fondness for the pictorial runs away with him, and we see extreme long-shots of action which tend to be both repetitious and confusing. These long-shots should be supported by closer angles, for, as in the sequence of the flag-raising parade at the Scout Camp, we are not only interested in the general view of the marchers and their surroundings, but also in the boys themselves. We would be inclined to suggest, too, that in the opening sequences showing the slum district in which the Community Center is located, slower music would prove a more appropriate accompaniment, changing to the more sprightly music after the picture moves indoors to show the activities of the children in the happier, more healthful surroundings of the Community Center.

## HOME MOVIES PREVIEWS

#### OLIVER TWIST

Scenario film, 4,000 feet, 16mm. black-and-white.

Filmed by David Bradley.

One of the most difficult things any amateur or group of amateurs can attempt is the filming of a scenario picture, even if it is only one or two reels in length. The magnitude, therefore, of this young group's task in turning out a 10-reel feature-length film may be appreciated, especially when complicated

by using a famous novel for the story, and the necessity for employing "period" sets and costumes.

To say that Bradley and his young associates have completely succeeded in this would be a decided exaggeration. We have seen better, more finished amateur scenario films; but we haven't seen many which carried a greater stamp of sincerity and hard work.

The shortcomings of this film are largely of a technical nature. The continuity is basically well handled, though the compression necessary to reduce it even to ten-reel length leave some unavoidable gaps. The photography could be very considerably improved; it shows considerable traces of inexperience. The lighting of the interiors is rather elementary, and the make-up could be subject to much improvement. However, such difficult and important details as sets, costumes, casting and performances go far to make up for these other technical flaws.

#### PEER GYNT

Scenario film, 4,000 feet, 16mm. black-and-white.

Filmed by David Bradley.

This, apparently young Bradley's second major production, is a considerable improvement over his earlier production, "Oliver Twist," especially as regards technique. The technical details, especially of photography, lighting and make-up, show a tremendous improvement. Some of the photography, both exterior and interior, is remarkably good. There are some excellent angles and lightings in close shots of the character players.

The continuity is less praiseworthy, as might be expected from the rather impressionistic material with which Bradley worked. Several of the individual sequences, however, are excellent, especially the "hall of the Mountain King" sequence, which is excellently impressionistic in treatment. It is to be regretted that some of these more fanciful sequences could not have been filmed with distorting lenses, or against impressionistic sets like those used in "The Cabinet of Dr. Caligari."

The acting and direction of this film are decidedly commendable, and the way the key sequences are edited to synchronize with records of the Greig "Peer Gynt" suites is noteworthy.

#### MOUNTAIN WONDERLAND

Scenic. 600 ft. 16mm. Kodachrome.

Filmed by R. J. Overdale.

This is a pretty fair scenic, with generally good composition, continuity and titling. However, the filmer was badly at fault with his exposure in many of the long-shots in the forest. Apparently he failed to realize the extreme differences in light-value in the sunlight and the shadows under the trees. This is the sort of a shot where it is absolutely necessary to take separate meter-readings of the sunlit and shadowed areas, and as a rule to balance exposure to favor the shadows.



# THE BULLETIN BOARD

## "Pro-Jr." Shiftover

A long-needed accessory for use with the Spider-turret model Eyemo 35mm. hand-camera is the "Professional Jr.," Shiftover Alignment Gauge just announced by the Camera Equipment Co., manufacturers of the well-known "Professional Jr." tripod. This shiftover permits the user of a spider-turret Eyemo equipped with the Eyemo prismatic ground-glass focusing accessory to line up focus and framing in the same accurate way as is done with a studio-type camera like a Bell & Howell or Mitchell. The camera is mounted on a laterally-sliding base so that for focusing it may be slid to the left. In this position the lens, when in front of the prismatic focusing eyepiece, occupies the identical position it will be in when camera and lens are shifted back into photographing position.

The male element of the shiftover's dovetailed slide attaches permanently to the camera-base, and permits using the regular camera-holding handle for hand-held operation is desired, and may also permit the camera to be mounted on an ordinary tripod when the shiftover feature is not needed. This male dovetail mates with a female dovetail slide on the shiftover base and permits the camera to slide smoothly from photographing to focusing positions for parallax adjustment, etc. The camera can be locked in either position by a positive locking device.

The shiftover has a stop-bracket which prevents the camera from sliding off the dovetail base. Dowel-pins are provided to position the device accurately on the "Professional Jr." tripod or on any tripod having either  $\frac{3}{8}$  or  $\frac{1}{4}$ -20 camera-fastening screws.

## Colburn Moves

The George W. Colburn Laboratory of Chicago, well-known specialists in all kinds of substandard laboratory work, announces its removal from the offices it has occupied for many years in the Merchandise Mart Bldg., Chicago, to new quarters two floors lower, in the same building, in Suite 995. The Colburn Laboratory, as is well known, specializes not only in Kodachrome duplicating and sound-printing, but in making 16mm. or 8mm., prints from originals on 35mm., 28mm., 17.5mm., and 9.5mm. film, as well as reducing 16mm. to 8mm. and enlarging 8mm. to 16mm.

## Emmet Camera Cases

At a time when wartime restrictions have made it difficult to obtain many lines of photographic equipment and accessories, it is more than interesting to note that the several lines of precision-made camera and accessory cases made by the Frank A. Emmet Company of Los Angeles are still available. Among

the several types of cases offered by this firm are Cam-A-Cessory Gadget Bags, and Everready, Slip-in and Pouch-type cases for cameras. Prices range from \$19.50 for the largest and finest of gadget-bags to as little as \$1.50 for the simpler pouch-cases.

## 8mm. Kodachrome Duping

Announcement from the Pacific States Film Laboratory, 1027 North Highland Ave., Hollywood, California, informs us that this firm has perfected a method of making reversal duplicates of 8mm. film, in either black-and-white or Kodachrome. The method used is stated to assure perfect definition and register.

## "Certified Sound"

Some details of the "Certified Sound" 16mm. recording system recently announced by J. A. Maurer, Inc., have at last been released. "Certified Sound" consists of a double-system 16mm. recording system which has been engineered to a degree of operational simplicity which can be described, the manufacturers state, as very nearly foolproof.

The system consists of three units: the recording mechanism, the amplifier, and a portable power-supply.

The recorder is a refinement of the well-known Maurer "B-M" recorder which has become virtually the standard for professional 16mm. recording. The amplifier is the heart of the "Certified Sound" system. It is equipped with a remarkable volume compressor circuit which automatically reduces amplification when the sound-input level passes beyond a predetermined point. This effectively eliminates the danger of over-modulating the sound-track when unexpected volume peaks must be recorded. This action is stated to virtually eliminate distortion in recording, and to permit recording sounds of normal volume with a higher amplification or "gain" setting, yet with no danger of "over-shooting" the sound-track.

The amplifier is of course equipped with the necessary ground-noise reduction circuit, a 4-input mixer, microphone pre-amplifier and the necessary indicating meters which, incidentally, have also been greatly simplified.

The portable power-supply unit of the "Certified Sound" system is available in either a 115-Volt AC model or a 12-Volt DC model for field use.

## Films Aid War Effort

There are no less than ten distinct fields in which 16mm. motion pictures are aiding in the defense effort, according to an attractive red-white-and-blue illustrated broadside just issued by Bell & Howell's Filmosound Library.

War reports by American and United Nations cameramen, civilian defense, democratic principles, aviation, indus-

trial training, emergency first aid, victory gardening, life of friendly neighbors, religion, general education—and morale-building recreation—are the headings, and outstanding new films are listed under each.

There is also a discussion of "how to get equipment," and an offer of a free film "How Motion Pictures Move and Talk."

Copies of the "Films that Fight for Freedom" folder can be obtained free by writing Bell & Howell, Filmosound Library, 1801 Larchmont Avenue, Chicago.

## New G-E Photo Data Book

The new edition of the G-E Photo Data Book, completely revised from the 1940 edition familiar to more than 50,000 users, is now available. While dealing in a large part with still photography, the new book has a great deal of material useful for movie camerawork as well.

Included in the book's contents are practical picture-making tips, useful tables, essential technical data and helpful suggestions for both black-and-white and color photography. Subjects covered in the book's 112 pages include measuring exposure for copying, metered flash work, color-filters, latest film-speeds (G-E and other ratings) simplified exposure guides, Photoflood and Photoflash exposure data, color-sensitivity classification of films, developer formulas, projection-distance data, and full technical information on the G-E exposure-meter, Photoflood, Photoflash and projection lamps, etc.

The book is conveniently pocket-sized, and sells for 50 cents. It is available through photo dealers everywhere.

## New Films

Several extremely interesting new 16mm. sound-films have recently been announced by as either immediately available or in production. Among these may be mentioned two 3-reel Kodachrome sound-films made by Ramsey Pictures of Oklahoma City for the American Hereford Association of Kansas City, Mo. The two films are released as a single production under the title "Herefords. the Beef Breed Supreme," but each section is complete in itself. The first reel deals with the ancestry and development of the Hereford since the first importation by Henry Clay in 1817. Scenes of outstanding Hereford herds and ranches in every part of the country are shown. The second reel tells the story of commercial beef cattle from the baby Hereford calf through to the meat-packer. Both films are available from the American Hereford Association on a free loan basis.



# Tricks Make Titles Interesting

By JEROME H. ASH, A.S.C.

A GOOD beginning is half the battle in interesting an audience in your picture—and an eye-arresting main title is one of the best ways I know of getting a picture off to a good start. Here are a few simple camera tricks that will help lift your titles out of the run-of-the-mill class.

In professional pictures, you've seen titles apparently melt into a formless smear, haven't you? Well, here's an easy way to do it yourself. Begin by making a transparency of your title with a still-camera, using any good, double-coated plate (*not* roll or cut film!) like the "Standard Orthonon." For a plain title, you can simply copy a hand-lettered or typewritten title written in black on a white card; the developed plate, being a negative, will give you white letters on a black field. For an "art" title, you can double-expose your transparency, copying the background from a suitable still *negative*. If you're shooting in Kodachrome, you can tone your plate with any of the commercially-available toners which will color the emulsion blue, red, green or sepia, and leave the clear letters uncolored.

Now put this into a simple shadow-box attached to your titler so that all the illumination on the transparency comes from behind. Line up the title-plate and camera just as you would in shooting any ordinary title.

Now, here's where we come to the trick. In making the transparency, you expose and develop the plate as usual, but when you fix it, fix it in plain hypo—that is, with no hardener in the solution. This leaves the emulsion soft. Wash the plate as usual, but only dry it enough to get the surface moisture out.

When you've exposed sufficient footage of your title, heat the plate with an electric heater or blow-torch just outside the camera's field, and as close to the plate as you can get it. The heat will melt the soft emulsion, and the title will disintegrate into a formless blob. Sometimes, depending on the means you have for heating the plate, you may find it necessary to have the camera running below normal speed—even in stop-motion, sometimes—to speed up this melting.

If you mount this plate upside down while you do this trick, you can make the title "melt" in; and if you make two

identical title-plates, you can make your title melt itself in and out.

Another shadow-box trick you can do when shooting titles in color is to use a black card with letters cut out, and illuminated only from behind. You can make the letters any color you want by putting colored cellophane behind them.

For example, you can put colored cellophane straws behind the letters, arranged in log-cabin style and in rows of alternate colors. Lit from behind, you'll get a really remarkable effect. And, of course, you can double-expose any picture you want against the black field of this title, and you'll get the effect of multicolored letters superimposed on the picture.

On the other hand, you can eliminate the black field and cut-out letters, and make your whole title of these back-lit cellophane straws, preferably with the straws, close together, running horizontally across the frame. Paint your lettering on the straws so that the letters will show up a black silhouettes against the luminous, colored background.

Now, suppose you want these letters to animate in or out. If you want them to animate in, paint the letters, and then as soon as the paint has dried, rotate the straws so that the portion of the letters painted on each straw is on the upper surface of the straw, and thus hidden from the camera. Shoot a few inches of the colored background this way. Then stop the camera and rotate the top row of the straws which have been lettered so that their painted surfaces are toward the camera. Shoot a few frames of this, and then rotate the next lower row, and so on, until all your lettering has been animated in. Then, of course, you can run off the necessary footage of the title, after which you can use the same trick to animate the title-lettering out.

On the screen the effect will be that the letters "wipe" themselves in and out. Naturally, you can make the wipe move up or down as you wish, and by putting the straws in vertically or at a slanted angle, you can make the wipe move horizontally or diagonally.

Another trick you can use is this: take a ball and cover it with a thin coating of either plasticine or (if you can get it!) shellac. While this surface is

still tacky, stud its surface with small fragments of mirror. Then hang this glittery, multifaceted ball behind the cellophane-straw curtain. Focus a spotlight on it so that the light reflects from the ball to the cellophane curtain in your titler's shadow-box. If you revolve the ball slowly while you shoot your title, innumerable little points of light will skitter across the title, changing color as they move from one colored straw to the next.

A variation of this is to reflect the light from a drum faced with strips of mirror. I've seen packages of body-powder and bath-salts for sale in drug-stores which came in packages like this. Maybe you could give one to your wife—and then beg the box from her for your moviemaking!

If you live in a city where there's a theatrical-supply store, you can get some of the multi-colored gelatin they use for colored-light effects in theatre spotlights. It's known as Brigham's gelatin, and comes in a variety of both solid colors and combinations. One type, I believe, has a sort of rainbow-striped effect and is available in several colors. Other types have mottled effects in different color-combinations. The pattern known as No. 80, as I remember it, is a splotchy mixture of green and yellow. No. 85 is a mixture of green, red and clear gelatin. The No. 90, purple, green and clear, and No. 95, red, yellow, green, blue and clear. This material costs only a few cents a sheet, and by using it either directly behind your cut-out title-letters, or in front of a spotlight for front-lighting titles, you can get some very interesting effects. You'll add to them if you keep the gelatin moving so that the color-patterns also move.

The possibilities of three-dimensional trick titles are almost endless. These really run into what the still-photo enthusiasts call "table-top" photography, for what you do is to build a miniature set around the lettering of your title. You can make them just as simple or as intricate as you want.

One clever one I remember seeing in an amateur picture devoted to a child's Christmas consisted of a simple, terraced background—probably made of books or something like that, with colored cloth or tissue-paper over them. The letters—the familiar, wooden cut-out block letters—were arranged on the "steps" of this terraced stage. At the sides of the frame were two or three small toys—just enough to give the right atmosphere. The same title-idea was repeated for the end-title. And in this, a small mechanical donkey was wound up and brazenly wagged its tail at the camera, while it shimmied over toward the center of the frame!

"Table-top" titles like this give you lots of opportunities to play around with your lighting. You can play with back-lighted and cross-lighted effects to your heart's content. I'd suggest making generous use of spotlights in this, and

(Continued on Page 418)

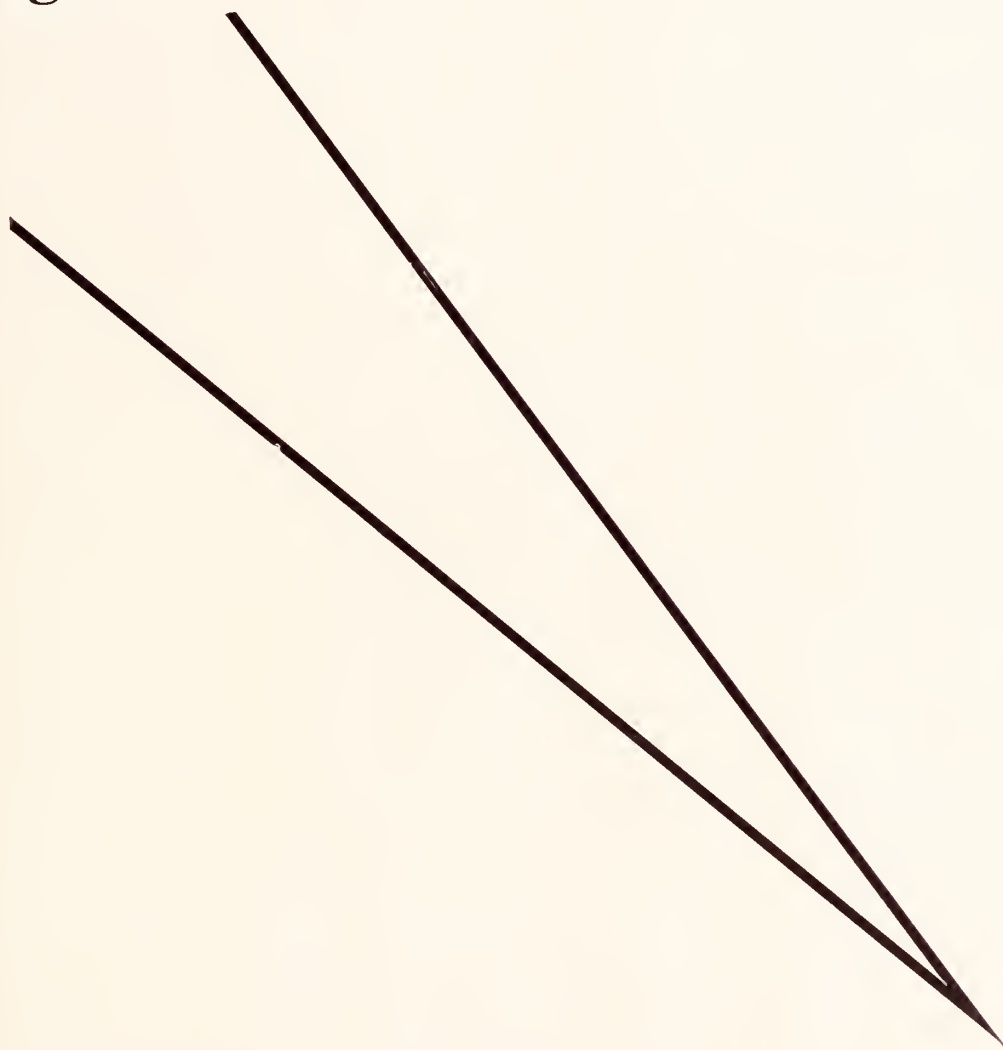


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## Trick Titles

(Continued from Page 416)

by using colored gelatins on the spotlights, you can get all sorts of fascinating color combinations.

"Table-top titles" also give you opportunities for animation. For instance, you can have a jointed doll-figure apparently pick up the cut-out letters from a pile and arrange them into words. Or you can have a toy truck or train apparently haul the words in. And you can—but if you want additional ideas, study a few of George Pal's "Puppetoons," and you'll get ideas by the carload! **END.**

## Editor's Finder

(Continued from Page 399)

way; twenty and more exposures on a single negative was an every-day commonplace for the old-time trick-artist. A return to this practice would in many cases be feasible, and would not only conserve film but would give the improved quality of an original negative rather than a dupe. How to do it? Ask any old-timer! He knows—even if the industry as a whole seems to have forgotten!

## Little "Big Games"

(Continued from Page 410)

teresting, but I wouldn't try it until I was reasonably familiar with the team's general style of play. Then you can get really characteristic bits of action in slowed-down speed, rather than wasting film on something that isn't important.

Very often—and particularly in the small schools—you can get acquainted beforehand with the coach of the home team, and probably arrange with him not only to give you an official OK to scamper up and down the sidelines with your camera, but to provide him, in exchange, with the privilege of viewing and studying your films of the game. In that event, you'll probably work more in a moderate slow-motion—32- or 48-frame speed, which can in projection be slowed down to almost the equivalent of 64-frame shots by slowing the projector. He'll appreciate slow-motion, as it gives him a better chance to study the faults of his players.

Sometimes a coach will be able to help defray the cost of film used this way; at other times he won't, but he'll still be glad to have your assistance as the team's official or semi-official cinematographer. As a matter of etiquette, however, make sure beforehand that the team doesn't already have an official cameraman. Some of the larger big-city high-schools do, I believe, have one—usually a professional, but sometimes an amateur from the student body. If you find another amateur is covering the games directly or indirectly for the school, you may sometimes be able to work in collaboration, each "covering" certain angles or certain phases of play

so that each man's scenes supplement the other's.

Finally, be considerate of the people in the stands behind you. After all, they can't see through you—and as most of them are likely to be students of one or the other of the schools represented on the field, they're eager (and decidedly entitled) to see the game. Do your best not to block their view a bit more than you can help.

In the smaller school games, you'll probably have to develop an armor-steel resistance to jibes from the stands. The atmosphere of these games is usually very informal, and when the crowd in the stands feels you're blocking their view too much, they don't hesitate to tell you so, individually and collectively. Very pointedly, too. When you've reached the point where you can take this "razzing" good-naturedly, and still bring back a good picture, you can really call yourself a good sports cinematographer! After all, it's all in fun—and you'll find more fun at these little "big games" than at the really big ones you've been accustomed to filming! **END.**

## Autumn Byways

(Continued from Page 411)

Then as the autumnal coloring grows more vivid and profuse, you can accentuate it by using a very slight degree of underexposure—very slight, you understand; not more than you'd get by using your meter set for Weston 10 instead of the usual 8 speed-rating. Then later, when the coloring has died out, and fall is merging into winter, you can, if you like, reverse the trick, and by giving a very slight overexposure—say shooting at Weston 6 instead of 8—you can soften the coloring, and make the whole scene tend more toward the pastel shades. This is especially useful in the scenes depicting the first soft snowfall, where you deliberately want to soften the impression of color.

The best of all of this is that you can get a really interesting picture, as out of the ordinary as your pictorial ingenuity can make it, without going far from home. In fact, you could make a complete picture like this without ever having to stir out of your own front yard! **END.**

## Uncle Sam's Cameramen

(Continued from Page 395)

—have given unstintedly and enthusiastically of their time and effort to make this project a success. Due in no small part to their efforts, we have been able to cram an absolutely incredible amount of practical instruction in exterior cinematography into an unbelievably short time. Fortunately, these students do not require instruction in the much more intricate phases of interior cinematography and lighting to do their work for the Army. But as far as exterior camerawork goes, every one of the graduates so far has emerged from the course as a field cinematographer you could trust

on any assignment.

"This wouldn't be possible if the students weren't, in the most literal sense, picked men. Every one of them begins the course with a better than average grounding in the scientific fundamentals of photography, and, as a rule, a good deal of practical experience in standard cinematography as either a genuinely advanced amateur or a 16mm. professional. The 'beginner amateurs' and snapshooters are weeded out before the start. The men we get really aren't what I'd call amateurs at all, but serious, well-educated hobbyists. Most of them have an understanding of photographic science and fundamentals as good or better than that of the average professional. We simply build on that.

"The proof of this is the high grades the students have so far made. We grade very conservatively: but the lowest course mark we've been able to give so far is 84—and the average is up in the 90's. The students are graded not alone on their photographic ability, but upon initiative, physical and mental alertness, and ability to shoulder responsibility and to perform under pressure. Those receiving the highest marks will go into service as Master Sergeants or Technical Sergeants and will probably work in the field or at Headquarters in charge of their own camera crews. Those with lower grades, receive lower ratings. Those who fail in the course remain in the Signal Corps, but emerge as privates. We have yet to produce our first private!

"None of us here knows what will be the future of this training plan. Our job right now is to turn out cameramen until the Army says it has enough. I believe we're doing it. But I can't give too much credit to the cooperation we've received from everyone in the industry, and to the remarkably high type of material we've had to work with as trainees. If they're representative of the country's amateurs and 16mm. professionals, the country may well be proud of them. And as they get out into the field, I'm sure they'll give us additional reason for pride." **END.**

## Planned Projection

(Continued from Page 412)

habit of rewinding our films with the projector's power-driven rewind: but you'll find that rewinding on a hand-powered rewinding board is a lot quieter, and much less distracting to the audience than the chatter of two projectors—one projecting, the other rewinding—going at once. For all practical purposes, it's just as fast, too; I've known of skilled amateur projection-teams who worked so well together that the rewind-operator could get a reel rewound and hand the empty reel to the projector-operator before the projectionist had the next reel so far threaded through the projector that he was ready to feed it into the take-up reel.

If you want mechanized speed, of course, you can easily build a motorized rewind out of an inexpensive electric



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# STIMULATING

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THE general excellence of the three Eastman negative films, their special abilities, wide latitude, and exceptional uniformity encourage directors and cameramen to try out new lightings, to strive for original effects—relying on the films' high quality to make the most of every scene. Eastman Kodak Company, Rochester, N. Y.

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*when little light is available*

## **BACKGROUND-X**

*for backgrounds and general exterior work*

# **EASTMAN NEGATIVE FILMS**



fan motor. Just attach a suitable bit of strap-iron to the motor-housing to serve as a support for a shaft carrying a larger pulley belted to the one on the motor-shaft. The shaft on this second pulley terminates, of course, in a suitable spindle to hold the reel. With an outfit like this you can rewind a full 400-ft. reel of 16mm. film in a matter of seconds.

There's been a lot of debate among amateurs for many years as to whether or not it is good projection practice to "bleed" the image slightly off the screen. Personally, I can't see any excuse for it. Usually the amateurs I've known seem to bleed too much of the image off the screen; and to me, at least, it's very distracting to try to concentrate on a picture when I see part of it flickering along the wall and furniture behind the screen. If you want to "bleed," do it conservatively: bleed the image over onto the black frame around the screen, but don't let it bleed off the screen itself. Your audiences, I am sure, will like the picture much better that way.

I've also heard some debates in amateur clubs as to whether there ought to be some sort of a break between pictures, or whether they should follow each other uninterruptedly. If both pictures are properly titled, so that there's no possible question as to where one ends and the other begins, my vote would be for the more professional smoothness of uninterrupted projection. If they aren't titled, they shouldn't be shown publicly, anyway. The only time you really need a break between pictures is when you want the chap who made the picture just screened to take a bow, or to give some explanatory remarks as to how he did it.

Size of screen is another detail that has been the subject of a lot of discussion. I know of at least one large club which rigidly confines itself to the use of a 48-inch screen, on the theory that since they're interested in *home* movies, pictures at their meetings shouldn't be projected to a size larger than would be the case in an average home. That's nice theory, I'll admit, but in the average home screening the audience is much smaller, and everyone is closer to the screen. When, on the other hand, you get a club together you may have a hundred or more members and wives, and the people in the back row are likely to be thirty or forty feet away from the screen. Under such circumstances, a 48-inch screen certainly doesn't even approximate the conditions of home projection!

My suggestion would be to proportion your screen to the size of the auditorium or hall you hold your meetings in. If it and your crowd are small, well and good: use a small screen. But if you've a large hall and a large audience, by all means use a screen large enough so everyone—even the latecomers in the back row—can see the picture clearly. With modern emulsions and modern pro-

jectors, even 8mm. is good for surprisingly large-screen projection. Good 8mm. will fill a 6-foot screen surprisingly well, and 16mm. will go to even theatre-size screens with today's projectors. After all, why not accent the *movies* in home movies, rather than the *home*, when you've a more than home-sized crowd? END.

## Take Your Camera to School

(Continued from Page 409)

tries. Classes like these offer perhaps the most spectacular possibilities, for in addition to the inherently interesting work being done by the students, you have the opportunity to follow some particular student or small group of students from the start of his or her course to its completion and the climax of the student, now a skilled worker, taking his place in some industry which is contributing to America's War Effort.

A year ago two 16mm. amateurs in Cleveland, Anthony L. Cope and John Borza, Jr., collaborated with the city's adult education director, Dr. Harry E. Ritchie, in making a two-reel Kodachrome film of this type which presented a cross-section of the classwork and activities of two of Cleveland's extension high schools. When completed, the film—presented with music and narrative via a public-address system—was screened as a highlight of the commencement exercises.

The film was made as a joint project of the students and teachers of the school. Most of the picture was photographed indoors with Type A Kodachrome, and a sequence illustrating the darkroom work of a class in photography was filmed in black-and-white, on red-base film, to present the illusion of darkroom illumination.

Student assistants were trained to assist with the production. The shooting script and schedule had to be prepared very carefully, and planned so as to permit doing most of the work within the normal class periods.

Filming was something of a problem, as it had to be done in crowded classrooms and with previously unrehearsed groups of inexperienced actors. Usually, however, filmers Cope and Borza managed at least one sketchy rehearsal before shooting.

In order to minimize production problems, each setting was visited and studied carefully beforehand. Thus furniture, lighting, camera positions and general actions and arrangements could be planned in advance. This resulted in saving a great deal of valuable time.

The lighting problems were especially difficult when long-shots of large classes had to be made, as ordinary Photofloods—even in the larger sizes—couldn't always "carry" clear to the back-wall for Kodachrome exposure. This problem was to some extent avoided by photographing smaller sections of each group at work. In any event, close shots of small groups, and close-ups of the

teacher instructing, and of individual students working, were essential parts of every sequence. The keynote in all of these scenes of practical shop-work was necessarily practical—showing what the students were doing.

In some instances—as in the sequence showing the students pouring molten metal in the foundry—no great amount of pre-planning was possible, and little control could be exercised. The cameramen then had to shoot newsreel fashion, and trust to his film-sense to get the scenes needed for good continuity.

The women and girls among the students were by no means neglected, either. Several sequences showed the work of these much more decorative pupils in the business courses. In these sequences close-ups of the various business machines—typewriters, dictaphones, calculating machines, and so on—offered particularly interesting pictorial opportunities as increasingly skillful fingers sped over the keyboards.

In colleges, there are further opportunities. Most of our colleges this year are offering an increasing variety of practical technical courses allied to the War Effort, which lend themselves naturally to picturization. In addition, most colleges are communities in miniature, with their own Air Raid Wardens, Fire Watchers, Auxiliary Police, Rescue and First Aid groups, and so on. A motion picture record of these activities will in time prove an invaluable historical record of how one section of America's youth rose to the emergency. Meanwhile, they offer new and off-the-beaten-path filming opportunities which should certainly be utilized by anyone who wants to make something a little different from his usual run of pictures. END.

## Answers to Cine Quiz:

1. 8mm. and 16mm.
2. Too much light.
3. Hide the cameraman from his quarry.
4. The exposure must be increased.
5. At the beginning of a sequence.
6. True
7. False
8. False
9. False
10. True
11. False
12. True
13. True
14. False
15. False
16. True
17. True
18. False
19. True
20. True
21. True
22. False
23. True
24. False
25. True

## Precision Editing

(Continued from Page 406)

can easily pick the two frames in which the action of the two shots matches most closely, with the door in each case open to the same relative degree, the actor through it to the same extent, his hands (especially the one on the doorknob) in approximately the same positions, and so on. Spliced together that way, your two scenes will flow together so smoothly



that the cut will be almost imperceptible on the screen.

In this type of precision cutting, it's a great convenience to have near your rewind an auxiliary spindle to hold the reel on which scene No. 2 is mounted, while the regular rewind spindle holds the reel carrying scene No. 1. In fact, a pair of these accessories—one on each side of the viewer—is desirable, since you'll be working with the "head end" of one scene and the "tail end" of the other. Eastman makes auxiliary spindles like this, but you can easily build them for yourself using an old piece of strap-metal (or even wood) for the upright, and a ¼-inch bolt for the spindle. If you place the auxiliary spindle on a slight slant, as shown in the illustration, you won't really need any catch to hold the reel in place, especially as in this work you'll be winding the film through very slowly. If you want something to hold the reel in place, and yet want to avoid the complication of the spring-tensioned catch on commercial rewinds, hinge another length of strap-metal, or even fairly heavy wire, to the base-board so that it can be swung up in front of the reel.

This same principle of precision cutting can be used in almost every kind of sequence where in successive cuts you are showing what is supposed to be a continuous single action, such as, for instance, cutting from a long-shot in which some person is seen starting to sit down in a chair to a closer shot of the same person in the chair. If you match the action of the two parts of your cut accurately, you can make the two scenes flow together so smoothly that the two actions actually seem to be one continuous one. The same thing applies to shots of two people talking or doing anything together, and of course in cutting from a long-shot to a close-up of a person speaking. In this case, cut your long-shot scene as the lip-movement begins, and start your closer shot at a frame where the person's head and lips are in approximately similar positions.

Precision cutting is important in sports shots, too, such as scenes of tennis where you have one fairly close shot of one player serving, and want to follow it with an equally close shot of the other player receiving the serve. If the second player is shown in the first shot, your key for matching action in the cut is his position, which should be approximately the same in the two cuts. Otherwise, the position of the ball is probably the key item to concentrate on in making the precision cut. The same thing applies to almost any other sport—diving, baseball, football, and so on. Sometimes in diving, by the way, you can get some very interesting effects by shooting two dives by the same diver, from the same viewpoint, and filming one at normal speed and one at a slow-motion speed, and cutting from one take to the other in the middle of the dive. This of course must be done at a point in each scene where the positions of the

diver's body match up closely, and if possible seeing to it that there won't be any sudden disappearances in the background.

This sort of precision editing is one of the hardest parts of movie-making because it calls for painstaking attention to detail. But if you'll try it—even on an old picture you've always considered as completely edited—you'll find it will give your films a smoothness you seldom see outside of professional pictures. END.

## Movies of Children

(Continued from Page 405)

the camera far enough away so your little actors aren't so painfully conscious of it. Sometimes you can conceal the camera, and get even more spontaneous results. John Arnold, A.S.C., the MGM Camera Chief, for example, sometimes hides his camera inside the house and shoots out through a big window at his children playing in the yard outside.

If you can add a remote-control to the telephoto lens set-up, you can often "steal" your scene, getting close to the youngsters to direct their play, or even take part in it, and trip the camera unbeknownst to them, at the proper moment.

But there are times when even the best-tempered children are inclined to sulk and "don't want to play." For a strictly home movie, the best thing to do in such a situation is to quietly put the camera away and finish your shooting some other day.

But if you're making a scenario picture, especially if you are working with a group of other people and children, you can't always wait so conveniently. Then, as I've found in my studio work, the promise of some reward will usually be a powerful inducement. But—if you promise a child something, for Heaven's sake, *keep that promise!* For a child never forgets a broken promise. If you tell him "if you do this for me, I'll give you a nickel, or an ice-cream cone, or that funny-book you want," live up to your word! If you break faith with him once, he'll remember it, and next time you promise a reward, he'll refuse to play. Half my success in directing children in professional pictures has been due to the fact that, no matter what happened, I have never permitted myself to make a promise I did not fulfill.

Finally, remember that as soon as the players in a film—whether they're adults or children—show any trace of self-consciousness, camera-consciousness, or direction-consciousness, the director has failed in his job. This is just as true of a home movie of the baby's first footsteps as it is of a \$2,000,000 professional super-production. Any time you're making a movie that involves people, the keynote of success is complete naturalness—the impression that the people on the screen didn't have any idea their picture was being taken. And it's the director's duty, first, last and always, to

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put his actors at ease from the start and keep them that way to the finish, so that the final picture on the screen maintains that impression of naturalness. **END.**

## Defense Films

(Continued from Page 404)

ing the food that's grown in these gardens.

Conservation of transportation is another essential filming subject. Films explaining and encouraging the "share-a-ride" idea are useful in any community; so, too, are films that explain why we're asked not to make unnecessary use of taxicabs, busses, street-cars, and trains, and why week-end travel is being discouraged.

In each instance, you'll find both Federal and local agencies which can provide you with the information you need to make your film, and which will in most cases welcome your efforts as something that will help them in their work.

Remember, though, that really worthwhile films like these can't be made without expense. And that expense will usually prove to be a good deal more than just the cost of the raw film exposed. Unless you or your club are in a position to underwrite the cost of production—usually several hundred dollars per reel—you'd better begin by finding out where that money will come from. Some Defense Councils may be organized in such a way that once they're convinced of the necessity of the film and your ability to make it, they can underwrite the expense; most of them aren't so fortunate. But if you've the ability to back up your plans, it's very possible you may find a sponsor among the local business houses, the Chamber of Commerce, or groups of prosperous and public-spirited citizens.

For example, insurance companies and sometimes large agencies can be interested in sponsoring films dealing with the prevention of accidents from fires, black-outs, dim-outs, and similar wartime conditions, including in some cases industrial accidents in Defense Industrial plants. Transportation companies can be "sold" on a picture that encourages the public to respect the staggered hours plan of riding to and from work. A newspaper might be persuaded to star their home economist in a series of reels devoted to the economical use of foods, the preservation of foodstuffs, the use of left-overs, and so on. The circumstances are likely to be different in each town, but the opportunity exists everywhere.

Wide use of instructional pictures of this type has been made in England. The authorities there give great credit to the use of non-theatrical motion pictures for the success they have had in training the public in war measures, not only in such obviously necessary things as withstanding the blitz and minimizing air-raid damage, but in the innumerable little things in life which have enabled the British people to keep up, and turn every detail of their country's economy—even scrap—to further the war effort.

About a hundred and fifty of these British pictures are available in this country in the 16mm. form, either from the British Information Service, 30 Rockefeller Plaza, New York, or through Bell & Howell's Filmosound Library. A complete listing of them, entitled "What Goes On in Britain Today," may be had from either of these sources. Among the topics listed you'll find such headings as "Civil Defense;" "A.R.P. Training Films;" "Blitz;" "Army, Navy, R.A.F.;" "Women at War;" "The British People in Wartime;" "Wartime Industry;" "Agriculture;" "Health, Education and Child Welfare," etc.

Studying these British films will help you in making yours: but in most cases, we need films—even on the same subjects—that interpret the facts in terms of American community life. There's an opportunity for you to make films like these which will help the War Effort, even if you don't happen to live in one of the coastal "combat zones."

There is a host of subjects. The films can be informative, educational and of great immediate value. They may have merely local interest; they might in some cases be even of national significance. But the main thing is to get the picture made—and then see to it that it is seen! Your picture, no matter how well made, will not have done a complete job until it has been shown at least once to every available audience! **END.**

## "Strobo-Sync"

(Continued from Page 403)

where the light from the projector's gate can fall upon the turntable.

In mounting the pickup, be sure that the cartridge does not rest over tubes in the amplifier as the heat from the tubes will ruin the cartridge. If the tubes are entirely enclosed within the case itself during operation, several round holes should be provided in the sides of the case to allow for adequate ventilation and heat passage from the motor and amplifier. This is important since an overheated motor will not operate evenly and may burn out during operation.

The case itself may be covered either with automobile topping or Spanish leather obtainable at most auto supply or leather stores. The author used Spanish leather, and found that although it is a trifle more expensive it is nevertheless much more beautiful and durable. Spanish leather, incidentally, is a patent leather material used for automobile upholstery and comes in a variety of colors and patterns.

So much for the materials that make up the reproducing unit. Now for the actual recording and synchronizing of the disc to the film.

If the movie maker has a recorder at his disposal, he can save the cost of cutting the discs. However, in any event, he should select only the best recording blanks available. These, at present, are the glass-base "acetate"

discs. Aluminum-base discs are apparently out "for the duration." Avoid the use of steel-base or unusually thin alloy-base blanks as these have a tendency to warp and cause uneven depths in cutting. Cardboard or paper-base discs should never be used as these usually have a very high scratch level and will not stand repeated playings.

Good recording blanks of the 16-inch size are now made by Audiodisc, Allied, Presto, Gould-Moody, and R.C.A. Only a good sapphire cutting-stylus should be used as this will allow the lowest possible surface-noise in the recording.

It is taken for granted that the recorder will and must we "wow" free and operates at the correct speed of  $33\frac{1}{3}$  rpm; also that it will cut up to at least 8000 cycles with a fairly flat response-curve. Further directions on recording may be obtained from the several manuals now on the market.

As to timing the length of your film it is only dependent on the number or lines per inch that the recorder will record. If your recorder cuts 96 lines per inch, a 16-inch blank on one side will record for  $17\frac{1}{2}$  minutes; at 104 lines per inch,  $19\frac{1}{2}$  minutes; at 112 lines per inch, 21 minutes; and at 120 lines per inch,  $22\frac{1}{2}$  minutes.

These times may vary a bit with different makes of recorders, but for the most part they are good indications of the time lengths. However, please bear in mind that the closer you cut to the center of the disc, the more loss of high-frequency sounds results and distortion creeps in. Usually, 16 minutes, the length of a single 400 foot reel of film, is all that can be tolerated if good quality of sound is wanted.

As a preliminary to the actual synchronizing, check your projector to see whether it has two, three, or four blades in its shutter. This is important since it is the number of flashes per second in ratio to the rpm of the turntable that maintains the speed of projection and correct synchronization. Also once again check your recorder speed after it is thoroughly warmed up, to be sure that it is cutting  $33\frac{1}{3}$  rpm steadily.

Arrange the projector so that the spilled light from the gate falls upon the recording turntable, or better yet, place a small mirror or shiny piece of metal in front of the projector in such a way as to reflect a bit of the projected picture onto the center of the recording turntable. Place a blank disc on the recorder and put the stroboscope disc (in the illustration) on the top of it over the spindle. Without cutting (unless you are using a test disc), start the projector which should be loaded as in a "take," and also start the recorder.

Turn out the lights or darken the room as completely as possible and adjust the speed of the projector until the bars on the "strobe" band corresponding to the number of blades in the projector shutter appear to stand still. At this speed, when the bars on the correct band appear to stop, the projector is running at exactly  $16\frac{2}{3}$  frames per



second. Note the speed-setting of the projector and then stop both the recorder and the projector. Rewind and reread the projector, but do not change the speed adjustment of the projector.

Run off enough film to bring the first frame of the main-title or picture into the projector gate aperture. Better yet, blank out or scrape off the emulsion of a frame on the leader about ten frames in advance and use this as a "sync" mark, starting the projector here both on recording and playbacks. If your projector has a clutch, start it with this, as it will give it an almost instantaneous start; otherwise be sure that your projector is warmed up so that it will come up to speed quickly when started by switch. Start the recorder, lower the cutting stylus, and check on your cut.

Then when the first note of music is sounded, or your commentator starts to speak, start the projector and immediately check the strobe disc for synchronization. If it is running slightly counter clockwise, slow down the projector just a bit to stop the bars. If the bars are going clockwise, speed the projector just a bit until they stop. Then during the entire recording watch the strobe for any changes in projector speed which may arise due to power fluctuations in the A.C. line or the increasing load on the take-up pulley, and adjust slightly as necessary. If the bars appear to be running in either direction but can be seen readily the error is 3% or less.

A little practice and you will find it very easy to hold synchronization throughout the entire recording. It is wise to go through a complete rehearsal at least once before recording to smooth any irregularities that may develop between yourself, the recordist, the commentator, and the musicians or an assistant providing an accompaniment being re-recorded from standard 78 rpm phonograph records played on a dual-turntable reproducer.

After finishing the cutting, transfer the finished recording to the playback turntable along with the strobe disc, and repeat the operation for cutting, as far as syncing is concerned. If the recording was carefully synced during its making, it will play back in perfect synchronization providing the strobe is checked occasionally during playback, by the spilled light from the projector gate, or the reflected light from the screen.

After a little practice it will be found that lip motion on the screen can be very easily matched to the disc and successfully held in sync. However, before attempting to do this, make sure that the camera you use for filming is running up to speed—16 frames per second, and not at 15 or 14 frames per second. This is important, as two or three frames per second difference will make it hard for your actors to match their lips to the faster action of 16 $\frac{2}{3}$  frames per second on the screen. The  $\frac{2}{3}$  frame per second difference is not so noticeable and can be matched easily on post-recording.

For those using cameras and projectors at the sound-film camera speed

of 24 frames per second, a strobe can be made up as will be shown very shortly so that sound-on-disc can later be transferred to sound-on-film without a change of speed.

Here it might be said that dust and grease are the worst enemies of disc recordings, even more so than of motion picture film itself. Grease will catch and hold dust and the two will become ground into the grooves of the record, raising the noise-level of the disc as it is played. Keep your discs in a dust free place, handle them by the edges with carefully washed hands or lint-free cotton gloves for that purpose (or the ones you use for editing your pictures) and when not in use protect them in dust-proof envelopes and store them flat in a cool place.

Never allow acetate discs to become heated, as the surface may literally melt on you. If dust or grease should get on the discs they may be washed gently with plain soap and water. A complexion brush (intended for use on women and babies) should be used to remove the grease from the grooves. However, be careful not to get the center label wet as the glue used to fasten it to the disc may run into the grooves and ruin the disc.

It is a good idea to copy the strobe disc shown and fasten one permanently to each disc with paper rubber cement. Duco, Lepages' or other china cement may be used for this purpose, but the thinner of the cement is also a thinner for the surface of the record—so do not get any of it on the grooves or your disc will be ruined.

The theory of the stroboscope disc is as follows: There are 360 degrees in a circle. When this revolves at 33 $\frac{1}{3}$  rpm it results in a total of 11,999.8° per minute. A three-bladed shutter on a projector running at 16 $\frac{2}{3}$  frames per second flashes light 50 times per second, or

3000 times per minute. Therefore, dividing the flashes per minute into the number of degrees per minute will give us 3.99° or for practical purposes 4° per flash.

In other words, as each bar of the three-bladed band on the strobe disc moves through an arc of 4°, the shutter flashes light off and on once, so that the 90 bars in the band appear to stand still when the projector is running at 16 $\frac{2}{3}$  frames per second and the turntable is revolving at 33 $\frac{1}{3}$  per minute.

The relation of a two-bladed shutter (33 $\frac{1}{3}$  flashes per second) for a 6° (or 60-bar band) arc and that of a four-bladed shutter (66.66 flashes per second) for a 3° (120 bar band) arc is also the same.

For this reason 16 $\frac{2}{3}$  frames per second was adopted as standard since any projector could be used interchangeably, re-



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ardless of the recording projector, for playback, and synchronization could be maintained.

An error of one per cent in speed is immediately detectable by this method and close syncing can therefore be expected providing the operator is careful in recording and playback to keep the projector-speed constant by use of the strobe. Recently the author finished a 45-minute 16mm. Kodachrome film for the Boy Scout Organization in Syracuse, using this method with very successful results; the film employed both narration and lip motion.

It is the hope of the author that the system described will enable amateur movie makers to obtain more enjoyment from their hobby as well as provide a more professional appearing, and interesting presentation of their films to their audiences. Comments as to the success of this system or suggestions as to its improvement from other amateurs will be very welcome.

Following is a list of parts of the author's equipment and their prices:

(prices subject to change since purchase date.)

33 $\frac{1}{3}$ —78 rpm Green Flyer motor, model H3D64 and 12-inch weighted turntable .....	\$11.30
Astatic S—12 pickup arm and original cartridge using needles (cartridge used now as spare)....	7.61*
Astatic permanent point (sapphire) cartridge (crystal) No. L.P. 21.—(mounted on wooden block to fit above pickup arm).....	4.80
Wright-DeCoster 6-inch dynamic speaker (now used as auxiliary only .....	3.50*
Jensen 12-inch dynamic speaker—model C12 X 8993 A (mounted in open-ended portable case 20" x 14" x 8").....	10.25
50 feet 3-wire cable with five-prong plug .....	1.88
Parts for amplifier using two 2A5's, one 53, one 58, and one 80 tubes, including a microphone input, tone and volume controls, two phone inputs .....	7.54
Plywood for pickup, amplifier, and turntable case 25" x 16 $\frac{1}{2}$ " x 8" with cover, and brackets and screws, plus wood for speaker cases .....	1.32
Spanish leather covering for cases .....	3.50

\$40.59

\* Not included in cost above—used only as spares.

The amplifier was designed and built by R. William Stanmyre of Syracuse and allows for the insertion of various types of correction networks to match the recording curves of the discs played. It has a flat response from 40 to 8000 cycles and is down about 2 db at 10,000 cycles. The rest of the equipment is of the author's own design and construction. END.

Joe Ruttenberg

(Continued from Page 397)

job if I possibly could. So in the one day remaining before the axe was slated

to fall on me, I put on a display of efficiency such as I'm sure has never been seen in any newspaper office. Instead of taking things easy on the bench and rotating the calls in turn, I planted myself right at the Editor's shoulder. Whenever he wanted a boy, I was there, Johnny-at-the-rat-hole, before he could get farther than 'B—!'

At the end of the day, I stepped up to him with a properly crestfallen air and said I understood he was going to let me go. Instead, he told me he had had his eye on me, and because of my unusual efficiency, he was going to raise my salary 50c a week!

"He also asked me to look around and let him know what phase of newspaper work I'd like to go ahead in, as the next time there was a vacancy in that line he was going to transfer me to a better job!

"Well, I'd seen enough of the workings of the paper to know that the work of the cameraman interested me. And before long, I was promoted to the post of assistant in the darkroom.

"I hadn't been on that job long—barely long enough to know my way around the darkroom—when a really big story broke. A big excursion-steamer down the coast was wrecked. All the available cameramen were rushed down to the dock, to shoot pictures of the survivors as they came in, and to buy up any films the excursionists might have snapped. My boss, the head laboratory-man, was off duty, leaving me alone in the darkroom. I tray-developed over 300 rolls of amateur film that night (in addition to the plates sent in by our own still-men), and made hundreds of prints. Working with wet negatives, I'll admit I ruined quite a few shots in the printing—but enough of them came out well so that the 'American' had a fine display of photos of the wreck to spread across page 1 of the next edition.

"As a result of that night's work, it wasn't long before I found myself promoted to a full-fledged cameraman. And my first big assignment was a tough one, too. I'd worked around on routine, unimportant shots for quite a while. Then one night, right around Christmastime, we got word of a big train-wreck. Due to the holiday, none of the other cameramen were available, so I was elected—green or not.

"As I was packing my outfit to go out, one of the head men saw me putting a flash-gun and a supply of flashpowder into my kit (this was long before the days of flashbulbs) and told me that because one of the staff men had been blinded by a misfired flash shortly before, an order from the big boss had just gone into effect banning all further use of flashpowder by the 'American's' cameramen. Reluctantly, I left the flash equipment behind, and went out to cover a big night-time story minus flashlighting.

"When I came back with a nice collection of negatives, everyone was amazed and accused me of either breaking the anti-flash rule or pulling some

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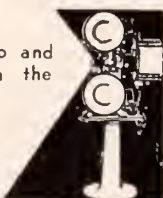
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sort of a miracle. In reality, I hadn't done either: I'd simply worked a little trick that was possible back in those days before the synchronized flash was invented. Naturally. I wasn't the only news cameraman on the scene; all the 'American's' competitors were well represented—and they, at least, weren't working under any taboo against flash-powder. So I simply set up my camera and, when I saw one of my competitors getting ready to fire off his flash, I'd open my shutter and let the one flash make both our pictures! The gang in the 'American's' City Room got quite a kick out of the way I had let my competitors flash my pictures for me."

All told, Ruttenberg spent eight years with the "American," and then opened a successful portrait and commercial studio of his own. During this period, he did a great deal of work for Joseph Urban, the famous stage designer. Urban's work, as this writer remembers it, pioneered the modern technique of using dramatic lightings to achieve dramatic effects on the stage. In his production set-design, lighting and stage-groupings or compositions were combined to unusually high artistic effect, and the work that Ruttenberg did with Urban at this time, photographing actual sets, designers' models, and sketches with different systems of normal and colored lighting, undoubtedly had a lasting influence on Ruttenberg's camerawork.

During this association, Urban took Ruttenberg on an extended tour of Europe's theatrical centers. "I was supposed," he says today, "to photograph stage settings in the various places we visited. But as a matter of fact, I exposed a total of 17 negatives on the whole trip. It was a wonderful experience, though, and even though I didn't take many pictures, I learned a great deal that has since been very helpful to me."

It was at about this time, too, that the movie bug began to bite Joe Ruttenberg. He bought an old movie camera and, setting up a small laboratory, for a year or more he photographed and produced a local newsreel for the Loew theatres in the Boston area. He got a very thorough grounding in the fundamentals of motion picture work through this, for in addition to photographing his stories, he had also to develop his own negative, edit the weekly reel, and make the prints and titles himself.

The newsreel venture ended abruptly, however. One day a big story came along just at the reel's deadline. Joe himself went out with his camera to cover it—a spectacular fire—and rushed the exposed negative back to the laboratory where his partner, a strictly non-technical man, was to rush the film through development. When Joe returned to start making the prints, he found that the negative had shrunk so badly it would not go on the printer: his partner had tried to make the film dry more quickly by immersing it in alcohol! "So," as Joe says, "there wasn't any newsreel that week—and when the shout-

ing was over our newsreel was a dead duck!"

But the experience this venture had given Ruttenberg had been enough to decide him that making motion pictures might be his forte. So he sold his equipment, picked up his savings, and headed to New York, which was then a major center of production. For a newcomer to get a camera job wasn't very much easier in those days than it is now, and Joe had the unpleasant experience of watching his slim savings dwindle while the studios, with surprising unanimity, informed him that no job was available for him.

Finally came a day when the last of Ruttenberg's carefully-hoarded savings vanished. And here his story takes on a Horatio Alger-esque turn. A cousin of Joe's learned he was in New York and, probably sensing what must be happening to Cousin Joe's savings, kidnapped him bodily to share his apartment until a job presented itself. Then, in true Alger style, came a call from the old Fox East Coast Studio that there was an opportunity for Joe to start work immediately as an assistant cameraman!

From this point on, Joe Ruttenberg was on the right track, headed forward at full steam. He didn't remain an assistant very long—hardly more than long enough to learn the ropes of studio cinematography. Then one day the cameraman whom he was assisting retired from the picture after an argument with the director, and Joe was asked if he felt capable of carrying on and fin-

ishing the picture. He felt he could—and proved it by finishing the picture in such fine style that from then on he remained a First Cameraman.

He was one of the cinematographers, too, who helped keep New York going as a production center long after the greater part of the industry had moved to Hollywood. Finally, however, some seven or eight years ago, he, too, came to Hollywood. And it is since then that he has

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done his finest work. Winner of the Academy Award for "The Great Waltz," and repeatedly in the nominees' circle for almost equally outstanding photographic achievements, Joe Ruttenberg is one of those rare cinematographers who stamps every scene he films with the unmistakable imprint of his artistic personality.

This doesn't in the least mean that he gives every scene the same technical and artistic treatment; he doesn't, but even though he varies his lightings, compositions and general treatment to match the mood of the story, he maintains always an indefinable pictorial touch which stands out as clearly as any written signature.

Ruttenberg has no use for "formula" photography. "No two stories or scenes are ever exactly alike," he'll point out, "and even the same scene would probably be different if you did it twice with different actors or different directors. So if you want your photography really to fit the action and mood of the scene, how in the world could you do it if you tie yourself to a strict formula of photography?"

"I'll admit our work would be a lot easier if we could reduce it to a handy formula of 'so much key-light here, so much filler-light to balance it there, and so much lighting arranged so, and so, and so, to light the set.' But working that way would rob our pictures of the elements of realism and dramatic feeling which do much to bring the story and action really home to the audience. And you can only make things real, and key them properly to the dramatic mood of the scene, by suiting your photography to the individual requirements of each scene as it comes along.

"Sometimes this may mean going right against accepted 'rule-book' formulas of lighting and composition. So what? If your scene or your picture are better for it, who cares if you break a few photographic taboos?"

"I do think, though, that except where for a definite dramatic reason you're trying to show something as visually unattractive, a cinematographer should try to make his compositions as pleasing as possible. After all, the audience has to focus its eyes and its attention on the comparatively small rectangle of the screen for an hour and a half or two hours, and good compositions are a lot easier to look at than bad ones! Remember, too, you can use your compositions to help center attention on whatever is the most important part of a scene, thereby making things that much easier for the players and director.

"All told, if I have anything like a 'system,' it would be something like this: begin by making the best possible composition with whatever you have at hand. Then arrange your lighting so that the scene and effect are really believable—and there you are! As long as you start with a good composition and end with a believable effect, you can't go very far wrong, no matter what you're photographing." END.

## Movie-Making Cemetery

(Continued from Page 396)

stage which had almost a "Hollywood touch."

In order to eliminate the distraction of recognition of familiar faces in our own sales force of more than a hundred men and women, we employed professional actors through Central Casting. The first and second films dealing with somewhat similar scenes were photographed at the same time and involved about 250 scenes. Stock-shots needed were supplied by Dick Whittington.

Having an acetate recorder made it possible for us to record test records, using voices from our own staff. This gave us a clearer "feel" of the subject and we could try out the sales psychology before the Sales Manager and Division Managers before investing in the master recording. Final narration was done by Fred Shields, of radio KHJ, whose voice delivers the message in a clear and authoritative manner.

The number one film, "Ten Seconds Flat," covers the correct and incorrect approach to the prospect's home. Being the first film shown in the course, the opening sequence acquaints the audience with "Bill Winner" and his family, the character name representing the salesman in all films. Indirect story presentation has eliminated to a certain extent some of the "right and wrong" technique usually followed in instructional films.

"The Bread Winner," film number two, demonstrates and discusses the correct answers to questions which arise, and forms a strictly demonstration film for both old and new men.

Sales tactics in Forest Lawn are in some ways more difficult to handle than most, as the methods and procedures involved require tact and consideration beyond and above other selling problems. Needless to say, the Personnel and Sales Departments have selected only representatives of very high caliber, as the work of representing an institution of this kind requires a high degree of intelligence and understanding. The turnover in the sales staff is small, and in many instances only one or two applicants are accepted and trained each week.

Besides the visual aids, lectures, and study, each applicant for the sales staff upon acceptance is individually instructed in order to determine the position best suited to his abilities and talents. Part of each day during the first week is spent in tours through the Park and the various departments.

Upon completing the first week, each student is sent out in the field with a seasoned trainer until he has mastered sufficient knowledge to stand on his own feet. Applicants for other departments are, of course, given similar special training courses and guided by their respective department heads before being given full responsibilities.

As the representative progresses with



his knowledge and understanding of the work, his division manager can again review sales policies with the existing slide-films.

Like many institutions, Forest Lawn is, of course, concerned with the present raw-stock situation, and the far-reaching decisions of recent date affecting film for non-theatrical purposes can slow up or bring to a standstill our visual training program. Fortunately, our supply of film stock should allow us to complete the two new scripts which will make the number three and four films. Beyond this point, we must all look to the results of our armed forces and the policies of our government in the present crisis.

The author, like all producers of training and morale building films, feels that this work has a definite part in furthering the war effort. We, of course, all know that the straight advertising film, having no direct purpose other than to publicize a product or name, is not only "out" for the duration, but is justifiably unnecessary under the circumstances.

To those of you who have time and money invested, and who plan to carry on, may I suggest that you let it be known that this work, your work, is in no small way a necessary and vital part of the war effort.

If our Allies, and, in fact, our enemies, feel that the independent producer and the morale film are necessities, should it not be the duty of this country and our government to see that this capable and able group be allowed the tools of its trade in order that we can keep up the good work by projecting the message before the non-theatrical audience and the armed forces? Naturally, we are aware that film is today a vital war necessity, and that its manufacture uses materials which may be needed elsewhere. But let us not forget how it has been proved both here and abroad that *ideas* on a strip of motion picture film in the form of propaganda and instructional films can be fully as explosive and as worthwhile to a nation at war as is the gun cotton which might be made from the same cellulose and nitrates.

If film is to be denied to civilians in order that the government and the Armed Services may be assured ample footage for their vast and essential training-film programs, we of the non-theatrical field have no complaint. We do, however, feel that a great deal of curtailment should first take place in the theatrical field, eliminating such wastes as double bookings, the huge number of release-prints often used, and so on. This would assist the War Effort not only by freeing for essential Governmental use a lot of film stock the use of which otherwise is at least questionable, but also, we may hope, permitting a supply of film to be provided for use by those who are best equipped to produce essential non-theatrical films for propaganda on the home front, and for institutional and public training and instructional purposes. END.

## Combat Cameraman

(Continued from Page 394)

officers. There was no time for delicate measures of first aid: they picked him up bodily and simply threw him across to the destroyer, where he came to many hours later. A few moments later the piled depth-charges exploded, and the ship from which he had been so providentially rescued sank.

Since then there has followed lengthy hospitalization, first in Egypt, then in South Africa, and finally in England, but at the last reports Cinematographer Borradaile is nearly fit again, and itching for further useful assignments.

He reports that no matter what risks one takes, getting worthwhile action pictures of modern warfare is incredibly difficult. If there are to be stills of today's battles like the history-book pictures of battles of a century ago, they, too, will have to be painted, he says, and the movies will have to be staged if they're to look like the average layman's idea of battles. For in modern warfare, the distance between the units engaged, the dust, and the ever-present haze conspire to make the photographer or cinematographer concentrate on his own side of the fight. The German propaganda films, he states, are all staged, mostly just after the capture of a place, to give greater realism. END.

## 16mm. Recording Methods

(Continued from Page 393)

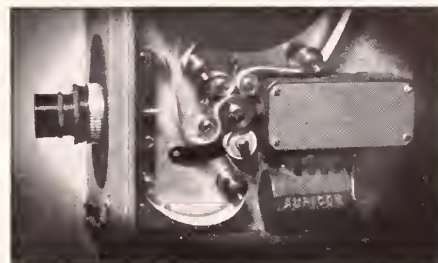
ing is useful only for tests or for films which are not intended for duplication. On the contrary, single-system recordings can be re-recorded and printed on as many duplicate prints as desired. The only disadvantages of this system are that there is a slight loss in high frequencies in the recording, and the fact that the original sound-track must necessarily be re-recorded before it can be easily edited and prepared for release-print duplication. Since it is absolutely necessary to obtain a separate sound-track for editing purposes, even if the original recording is made single-system, it is certainly more logical and more direct to make the separate sound record by the double-system method whenever conditions permit.

Professional 16mm. sound films, like 35mm. ones, are usually re-recorded after editing to balance sound levels, to introduce music, sound-effects and narration. If the operation of re-recording from a single-system original can be eliminated by making the original recording by double-system, then the final release-print will be one step closer to optimum sound quality and costs and complication will be reduced.

Carrying this argument to its logical conclusion, it would seem best to obtain in the sound recorder a direct-positive sound-track if any re-recording is to be done. This has, in fact, been done by one 16mm. commercial producer who specializes in reversal and Kodachrome originals. He had his recorder built so

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that the modulation started at the edges of the sound-track area and filled in the space to the center. The galvanometer was so arranged that at zero modulation the sound-track area was completely filled in (black) except for a thin, clear line at the center. Maximum modulation showed up as a thin black area with a large white area, which is the same as a positive sound-track.

Another method of achieving the same end is to use a reversal film for making the original sound-track recording. Only the slow, fine-grain reversal films such as Eastman's "Cine-Kodak Safety Reversal Film" are suitable for high-quality double-system original sound recording.

If the sound original is made on a high-resolving sound-recording negative film, it must be printed only on a non-slip sound printer and on fine-grain positive film to get a positive sound-track that will be acceptable for re-recording. If the best 16mm. printers are not available, then better results can probably be obtained by using a fine-grained reversal film, instead of negative film, for the sound original. This is especially true of recordings which will be re-recorded before release-printing; these are decidedly in the majority in professional 16mm. production.

If music recordings are an important part of the production, then the ability of high-resolving negative films (with proper non-slip printing) to record extreme high frequencies gives them an advantage over reversal films. However, for speech recordings and for music recordings from commercial discs, reversal originals leave nothing to be desired.

Of the 16mm. sound systems available, the "B-M" equipment made by J. A. Maurer, Inc., of New York, is regarded as standard among practically all 16mm. professional producers. This fact is a tribute alike to the soundness of this equipment's design and manufacture, and to the high quality of recording possible with it.

This firm has recently introduced a new, simplified system of 16mm. sound-recording equipment and methods, referred to as "Certified Sound." This equipment adds to the excellent features of previous B-M units several new features which simplify the operation of the equipment and almost guarantee better sound quality.

The "Certified Sound" system consists of only three units: the recorder, the power-supply, and the amplifier. This amplifier unit contains the audio recording amplifier, the automatic ground-noise reduction amplifier, a 4-position mixer, high- and low-pass filters, indicating meters, a microphone pre-amplifier, and a new volume-compressor circuit which almost completely eliminates the possibility of over-modulation.

This remarkable compressor circuit begins to operate and to limit further amplification when the percentage of modulation reaches 31.6%. It essentially reduces the amplification of high-level sound so that they do not cause the galvanometer to "overshoot" the limits of the sound-track area and thus cause distortion in the recording. This feature makes it possible to ride the gain higher on sound of ordinary volume-level, such as voices or natural sound-effects, without danger of overmodulating a sudden increase in sound-level.

The power-supply for the equipment is available in either 115-Volt AC models or a 12-Volt DC model for field use with 12-Volt batteries.

Unlike 35mm. recorders, the Maurer recorder is built to operate in either direction, for making recordings to be printed either with reversal or Kodachrome picture-originals, with duplicate negatives from such reversal originals, or with negative originals. In 35mm. production all picture originals (including Technicolor) are on negative film. This eliminates the necessity of having a film recorder which will record going either "forward" or "backwards."

But in 16mm., since both negative and reversal films are used for picture originals, a professional 16mm. recorder must necessarily be able to record equally well in both directions, so that it can produce sound originals which will have the same relative position as the picture with which they will be printed.

For this reason, all 16mm. sound-recording stock is available in two windings. One is called the "A" or "1" winding, and the other the "B" or "2" winding.

Film with the "A" winding is used with the recorder operating from left to right to produce sound negatives from which sound positives can be printed for duplication with reversal or Kodachrome originals.

"B-winding" film is used with the recorder operating from right to left to produce sound negatives which can be printed with original picture negatives.

Type "A" winding is also used to produce sound negatives which can be printed with black-and-white prints made from duplicate black-and-white negatives from reversal or Kodachrome originals.

Obviously it is very important for the professional 16mm. producer to have film of both windings on hand so he can use whichever may be required for the particular type of picture he is producing. Rewinding the film in the darkroom so as to make, say an "A" winding out of a "B," is definitely *not* recommended.



Simple as this operation may seem, it is almost certain to introduce static markings on the film during the rewinding process. This point cannot be stressed too strongly; strict observation of this little precaution will save the 16mm. producer a very great deal of trouble in his recording.

Sixteen millimeter sound-recordings made with Maurer equipment on a modern recording stock like Agfa's high-resolving, yellow-dyed stock or Eastman's high-resolving sound-recording film (emulsion type 30-18291) with proper filter to give an essentially monochromatic recording light, and of course properly exposed, developed and printed, are capable of results which compare very favorably with the average 35mm. recording. With proper materials and processing, the frequency-response of 16mm. recorders, amplifiers and film is essentially flat up to a frequency well beyond the ability of commercially available projectors to reproduce.

If we compare the results obtained in 16mm. release-prints made by reduction-printing from 35mm. sound-track with 16mm. prints made from 16mm. original track, it is more than likely that the direct-16mm. will outshine the reduction-print. The reason for this is that 35mm. recordings are generally not equalized for reduction to 16mm. and to the characteristics of 16mm. reproducers, so while the original 35mm. recording may equal or surpass the results obtained in the direct-16mm. recording, it is definitely inferior to the direct-16mm. recording after it has gone through the reduction process without the necessary filter compensation.

There is absolutely no basis of comparison between 16mm. recording equipment and 35mm. recording equipment when such factors as simplicity, portability, cost, convenience, and the way the recording will sound when reproduced by a 16mm. projector are considered. Direct-16mm. scores on all counts! With the new Maurer "Certified Sound" system, the entire recording outfit is completely contained in three cases and can be carried conveniently in even the smallest of automobiles. The Berndt "Auricon" equipment for double-system recording packs into two even smaller cases (or three, if the power-pack is used)—each case about the size of a portable typewriter case—and the recently-introduced "Auricon" single-system recorder, which gives excellent results, is equally compact.

The necessity of double-system production in the printing and editing stages of professional production has led to the development of special double-system projectors in 16mm. Usually these double-system projectors are adaptations of commercial sound projectors rebuilt by or for their users so that they will project sound and picture from separate reels and keep them in exact synchronism. Both Bell & Howell or Ampro projectors are easily adapted to double-system projection, and since a projector of this type is so essential in professional work, a photograph of a Bell & Howell

adaptation is shown herewith to indicate the general method.

No double-system 16mm. projectors are available commercially as yet. However in England, shortly before the start of the war, a unit of this type, known as the "Tamar Link," was marketed as an accessory for Bell & Howell sound projectors. The device consisted simply of a metal sub-base upon which the standard Filmosound was mounted, with appropriate feed and take-up reels to carry the extra length of separate sound-track film.

We have spoken of the necessity of re-recording professional 16mm. sound-tracks. To date, only one type of re-recording or "playback" head is available in 16mm. This is the film phonograph or re-recording playback made by J. A. Maurer. This unit has practically the same film movement and optical system as the B-M recorder, and when used in conjunction with a B-M recorder, is capable of making re-recordings which, to speak conservatively, are every bit the equal of the originals. By introducing suitable filter compensation into the re-recording circuit, it is entirely possible to make re-recordings that are decidedly better than the original. This is even more true when the re-recording amplifier circuit includes the "Certified Sound" compressor and other features. Some producers have exhibited reels re-recorded with this circuit which, while rather indifferent recordings in the original, were made decidedly acceptable by the "Certified Sound" re-recording process.

Generally speaking, all but the very simplest offstage narrative sound-tracks need re-recording if the best results are to be had. Therefore the professional 16mm. producer should include two or preferably more film-phonographs in his sound-recording equipment. In some instances, commercial 16mm. projectors have been extensively revamped and modified for this purpose, but obviously a film-phonograph designed especially for this service will have better film movement and optical characteristics, and will give higher-quality results.

In each of the three principal types of 16mm. professional production—namely, (1) silent film with offstage voice added; (2) the all-synchronous dialog film, and (3) a combination of sync dialog and

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offstage narration, with or without music and sound-effects—different sound-recording technique is required.

The simplest type of film is the silent film with an offstage voice added. If no musical background or sound-effects are required, this type of production can be made without re-recording, though it will naturally benefit by it. However, if re-recording equipment is available, it may simplify some of the problems of getting the original recording if the off-stage narration is broken down into sections lasting only two or three minutes, so that the narrator can rehearse and record in short sections, getting emphasis, timing, etc., right in one section before proceeding to the next. If the timing is not exactly right in any of these sections, while the rest of the take is satisfactory, pauses can be lengthened or shortened in editing to make the speech fit. Then the entire re-cut narration can be re-recorded to match the levels of the different sections, also obtaining the narration on a complete strip of film, without splices, which is of course preferable for printing purposes. If a musical background or sound-effects are to be added to the narration, it is much more economical to record the narration alone and then dismiss the narrator, and to assemble the music and any necessary sound-effects on one or more separate reels. Whenever music, narration or sound-effects are not required, opaque black leader is inserted in the reel to give the proper spacing. Then in a final re-recording operation the voice, the music and the sound-effects may be combined into one correctly balanced sound-track.

When only parts of a musical selection are to be used, or parts of two or more different selections are required to fit the changing moods of intercut action, positive prints of the selections required can be assembled on two separate reels, with blank film as necessary for spacing. This makes it possible to use parts of selections in a musical film-library without the necessity for cutting the prints and hence destroying their future usefulness.

The emphasis given to film-phonographs may seem exaggerated to readers who have not had the experience of using them, but my own experience has taught me that it is very necessary for the professional producer to have several of these units, which are quite as important to quality production as is the original recording equipment.

For the all-synchronous dialog film which has no narration, no added sound-effects and no music, only one film-phonograph is needed, and that for the purpose of matching voice-levels in the different sections of the film. If a musical background or sound-effects are to be added to the sync-dialog film, two or more film-phonographs will be required, with the sync dialog in one, the sound-effects in another, and the music track or tracks in one or two additional play-backs. The same is true when a film combines dialog, narration, music and sound-effects.

Opinions on this next point differ, but it has been my experience that it is much more convenient to re-record musical backgrounds from film recordings than from disc recordings. If the only available recordings of certain music or sound-effects are on discs, it will be best to transfer the disc recordings to film and then re-record from the film. The professional producer will certainly find it advantageous to have at least one really superior disc turntable and pick-up for transferring his discs to film, and then to do all further re-recording and mixing from film-phonographs.

This technique is of course familiar to 35mm. producers and technicians, who may sometimes combine 10 or 15 separate sound-tracks to make one final recording. The important thing I am trying to point out is that to produce recordings in 16mm. comparable to theatrical 35mm. recording, the 16mm. producer and technician must have comparable equipment, including acoustically correct studios, microphones, amplifiers, recorders, and re-recorders. That equipment exists, even though it is not as yet used by all 16mm. professionals. But the results it is giving in the hands of those 16mm. professionals who have such equipment and use it intelligently prove that in its rapidly-growing field—wherever release-prints on a picture are to be in 16mm.—direct-16mm. picture and sound are not only equal, but superior to the bulkier and more costly 35mm. END.

## "Rationed" Sets

(Continued from Page 391)

a background piece, and imaginative lighting suggest a great deal more on the screen than actually exists on the stage.

To do this, though, the art-director and the cinematographer must not only work together, but they must know beforehand with absolute accuracy just what angles are going to be required to film any given action. Sets like this will be planned for just those angles, and no others. Unexpected "protection" shots at different angles will be largely impossible, because no set background will have been provided for them. This will undoubtedly hamper the director who is not sure of himself, or the one who prefers not to take the cinematographer and art-director into his confidence. But given competence, imagination and genuine cooperation among these three key creative workers, it is possible to make the camera's one-eyed perspective go a long way toward helping us minimize the limitations on production value which the present set-construction limits seem to impose.

All told, while none of us can deny that the present restrictions on set-building are cramping our style to a considerable degree, it doesn't seem too optimistic to feel that these same limitations may force us to make use of latent and all too largely unused potentialities in our craft which may turn out to be in the long run offsetting advantages. END.

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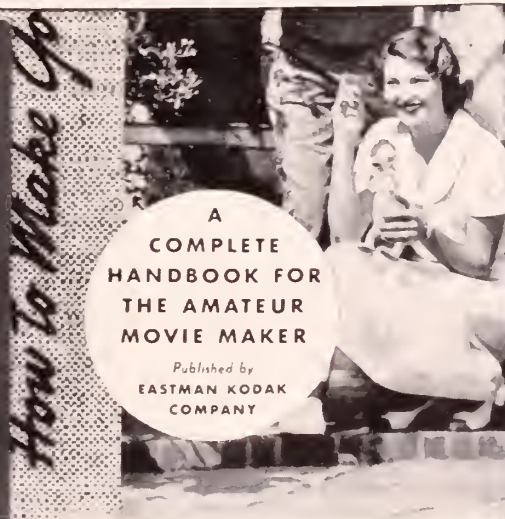
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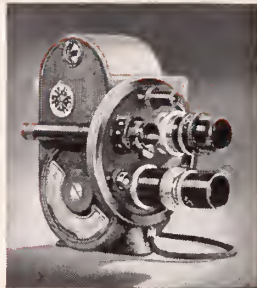


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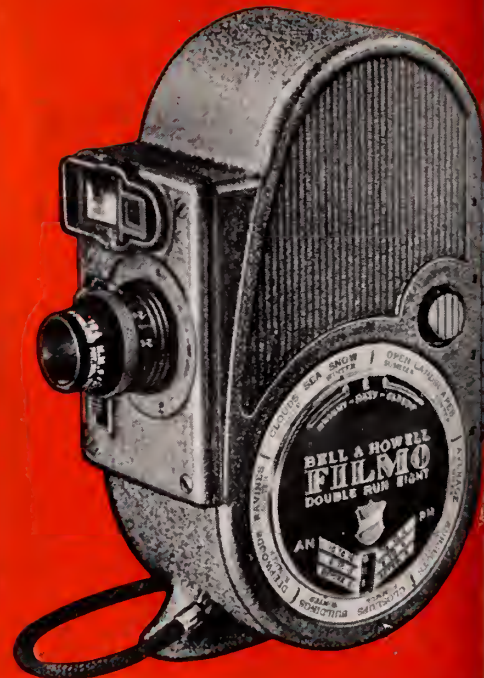
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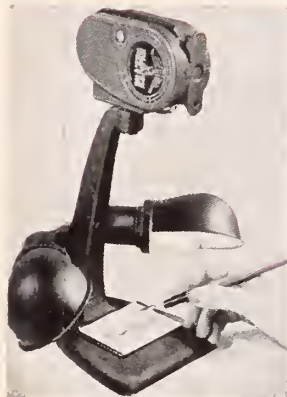


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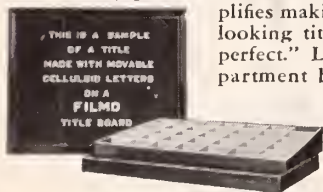
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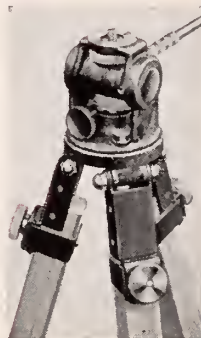


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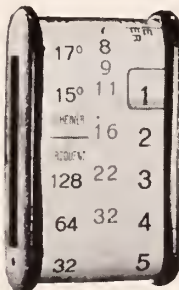
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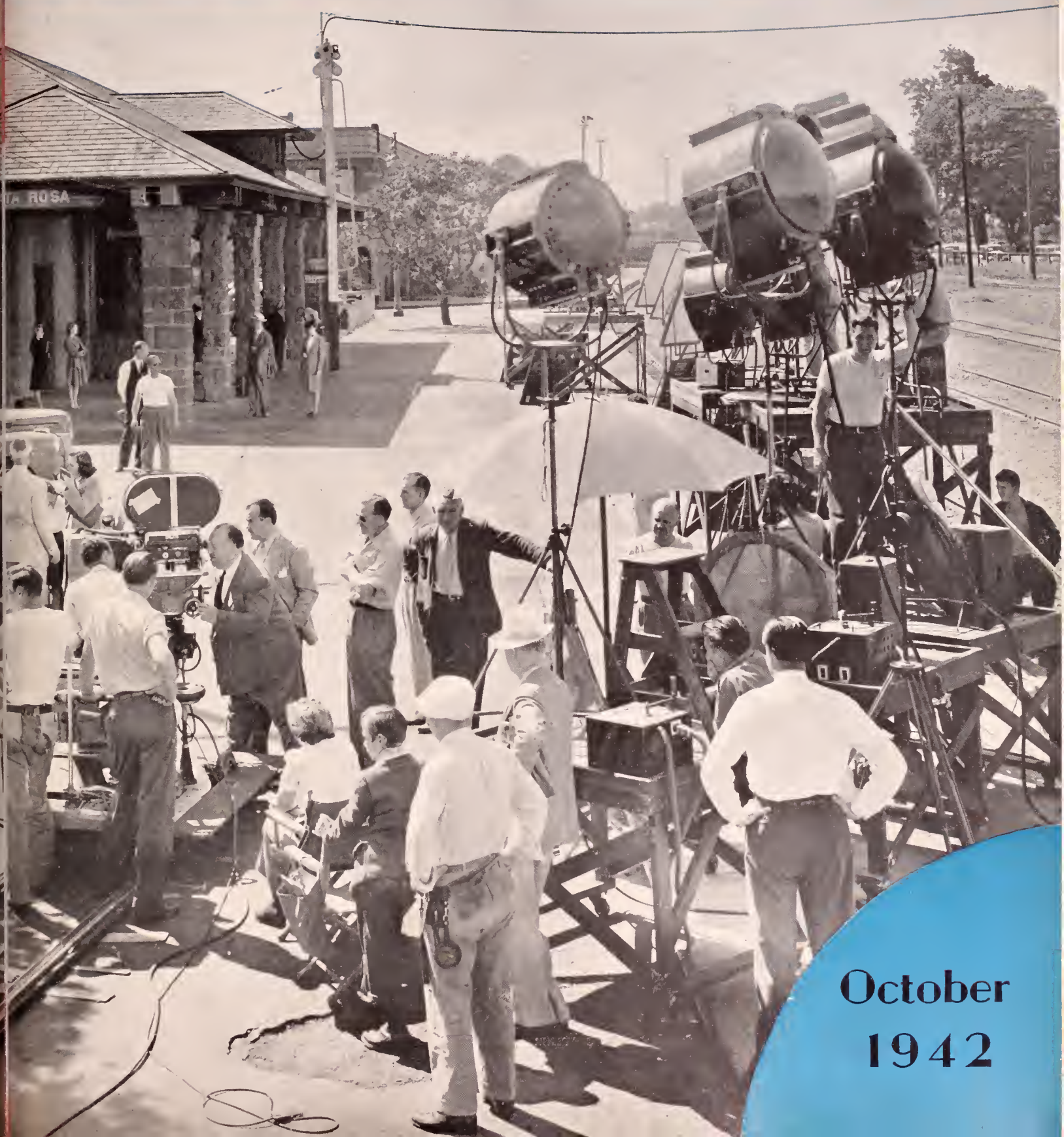
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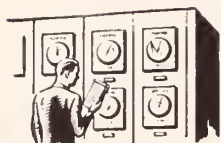
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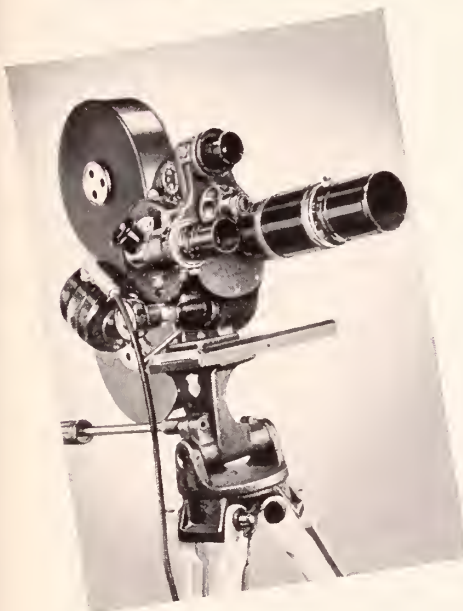
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# AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 23

OCTOBER, 1942

NO. 10

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### The Front Cover

This month's cover shows Joseph Valentine, A.S.C. (in light suit behind camera), making a dolly-shot on location in Santa Rosa, Calif. Note wedges used to level dolly track on irregular paving and the way incandescent "booster" lamps are rigged on dimming rheostats. Photo by Ed T. Estabrook.



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## War Board Cuts Film From 1941 Standard

A story sent out by the Associated Press from Washington Sept. 17 declares that motion-picture producers and distributors, during the year beginning Oct. 1, must get along with 10 to 24 percent less film than they used during 1941, the War Production Board announces.

Harold Hopper, chief of the W.P.B.'s motion picture and photographic section, said that despite the reduction there "should be no change either in the quality or length of films to be produced."

Voluntary conservation measures, Hopper predicted, will make possible the same production volume "as we have been accustomed to."

Principal savings of film are expected to result from fewer retakes and less cutting in the production of pictures.

W.P.B. based the reductions in the amount of 35mm. film to be received by producers and distributors on the quantities of film consumed in 1941.

Producers and distributors of entertainment films for the theaters will receive the following percentage of their 1941 consumption:

Those who used 150,000,000 linear feet of film or more, 76 per cent; 125,000,000 to 150,000,000 feet, 77½ per cent; 100,000,000 to 125,000,000 feet, 80 per cent; 75,000,000 to 100,000,000 feet, 82½ per cent; under 75,000,000 feet, 90 per cent.

W.P.B. announced that issuance of "releases" (revivals of old films) will be limited to the extent of film consumption for this purpose in 1941.

## Kelley Heads Council

Colonel Darryl F. Zanuck, chairman of the Research Council of the Academy of Motion Picture Arts and Sciences, has announced the appointment of William F. Kelley as manager of the Research Council.

Gordon Mitchell, who is a captain in the Signal Corps Reserve, has been Manager of the Research Council for the past ten years. He has been closely associated with the Signal Corps during this period and was largely responsible for the development of the Signal Corps Training Program here in Hollywood. Captain Mitchell is being called to active duty with the Signal Corps.

Kelley has been Mitchell's assistant at the Research Council for the past seven years.

## More Army Films

Philip Dunne, associated director of the Motion Picture Division of the Office of the Coordinator of Inter-American Affairs, has assigned production of "An Army of Specialists" and "The Army Medical Corps" to the Princeton Film Center of Princeton, N. J. Gordon Fox will produce.

Designed for both 35mm. and 16mm. distribution in the coordinator's South American and United States film program, the films will depict certain activities of the army. "An Army of Specialists" will amplify the recent statement of Lieut. General Brehon B. Somervell that out of every 100 army inductees 63 are assigned to duties requiring specialized training.

"The Army Medical Corp" will delineate organization and efficiency of the Army's Medical Department. Particular emphasis will be given to United States-South American collaboration in matters of military medicine.

Scripts for both films are now in preparation, with production scheduled for early Fall.

## DeVry Seeks Ideas

W. C. DeVry, president of the DeVry Corporation, Chicago, has instigated a production for Victory Drive with an offer of substantial cash awards for suggestions by employees on how to better the manufacture and production of motion picture sound equipment for the nation's armed forces, to which this firm is now largely giving its entire facilities.

Mr. DeVry, in announcing the Cash Award Suggestion Plan, said that the campaign was being conducted in accordance with Donald M. Nelson's request that management representatives give employees every opportunity to suggest ways to increase efficiency of war production.

Stepped-up production has necessitated the acquisition of additional factory

## Greetings

Just a word of greeting to some old friends. Due to a combination of circumstances I am back on the familiar old lot, where I shall strive to do the things that will entertain and perhaps occasionally add to the information of those seeking news of the vast motion picture industry.

GEORGE BLAISDELL

space for more efficient and speedier handling of urgent war orders.

Mr. DeVry also announced the Minute Man Flag, signifying more than 90 percent enrollment in War Bonds and Stamps Payroll Plan, was recently presented to his firm.

## Movies for Servicemen

Hollywood's latest motion picture productions will be shown free of charge to convalescent service men in overseas base hospitals in combat areas, American Red Cross Chairman Norman H. Davis has announced. Portable equip-

ment, furnished by the Overseas Motion Picture Service of the Red Cross, will be used.

Director of the new Red Cross movie service is Hampton W. Howard, who also directs the showing of free movies to convalescent service men in sixty-eight hospitals in Continental United States, Alaska, Puerto Rico and Hawaii. Sixty-one additional hospitals here and abroad will receive the Red Cross motion picture service in the near future, Chairman Davis said.

The films will be shown on 16mm. sound projectors equipped with separate generators, thus making it unnecessary to rely on outside electrical power for operation. The Overseas Motion Picture Service of the Special Services Branch of the army is making the films available to the Red Cross. They have been donated to the army by the motion picture industry.

This marks the first time in the history of the motion picture industry that the latest Hollywood productions have been printed on 16mm. sound film, Mr. Davis said.

"With the extension of the Red Cross Hospital Motion Picture Service to overseas bases, we are making it possible for American convalescent troops to have free entertainment no matter where they are serving.

## Fighting Russians Shown in Combat

"Moscow Strikes Back," documentary soldier's-eye view of the Soviet counter-offensive which hurled the Nazis back from the central front, began its first American showing at the Globe Theatre August 15. The film has an English commentary spoken by Edward G. Robinson.

Compiled from footage shot by 100 cameramen who advanced with the vanguard of the Soviet forces, the film tells the full story of Nazi savagery and Russian courage in terms that impelled foreign correspondents who saw it in Moscow to call it "one of the greatest films of the sort."

Among other things the picture reveals the brutalities visited on the civilian population including the hanging of citizens of Volokolamsk and the murder of women and children who refused to obey the Nazi authorities in the occupied regions.

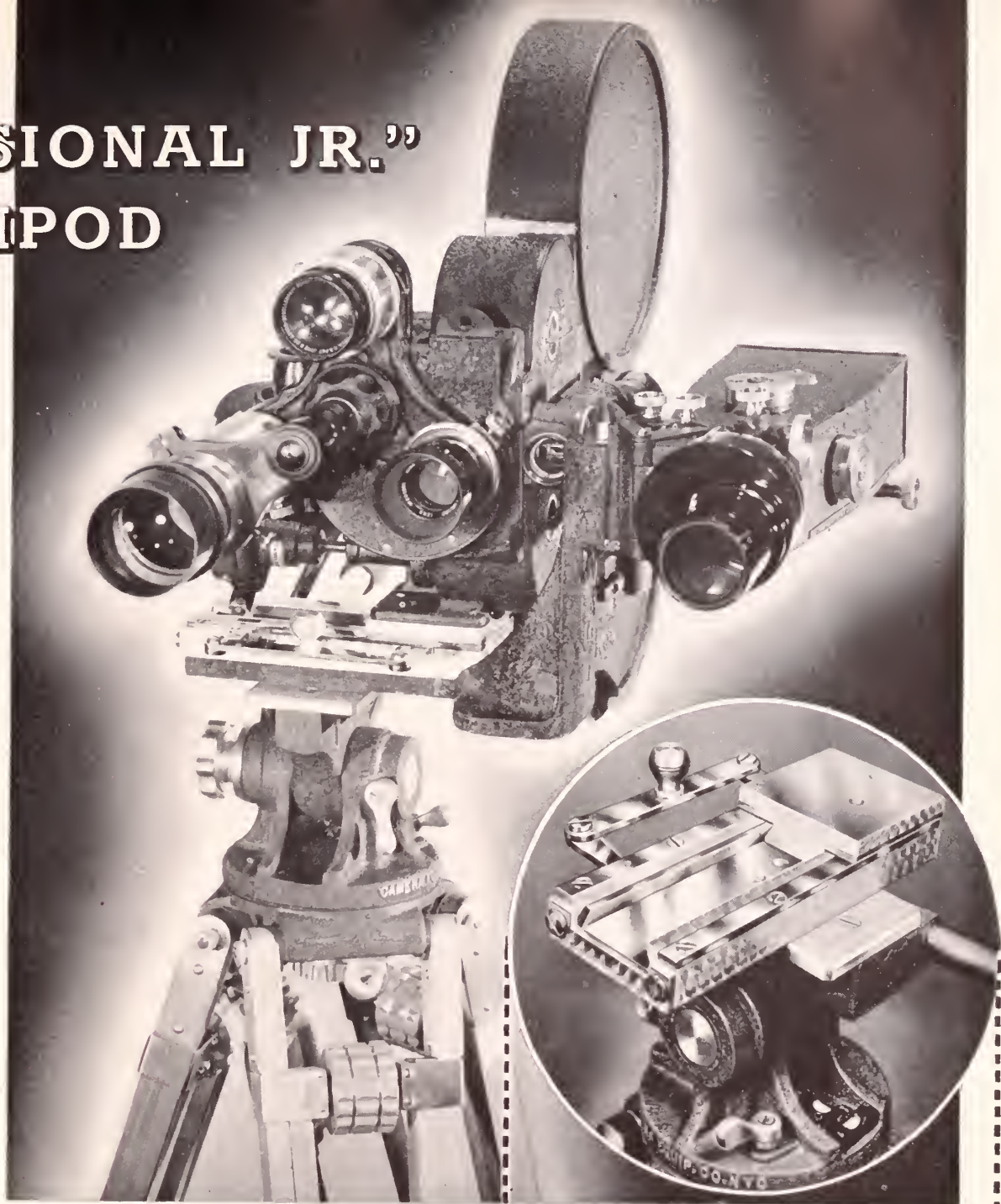
Originally known as "The Rout of the German Armies at Moscow," the film was prepared for American showing under the direction of Nicholas Napoli.

## Two Notables Join United States Army

Col. Jack L. Warner and Col. Darryl F. Zanuck have severed their respective business ties as picture producers and joined the army.



# PROFESSIONAL JR. TRIPOD



The B & H Eyemo camera shown here mounted on the "Professional Jr." Tripod and Shiftover has been especially adapted for aerial use by the Office of Strategic Services, Field Photographic Branch, Wash., D. C.

## Unsurpassed in Quality, Versatility and Rigidity

★ The friction type head gives super-smooth pan and tilt action,—360° pan and 80° tilt. A generous sized pin and trunnion assures long, dependable service. "Spread-leg" design affords utmost rigidity and quick, positive height adjustments. A "T" level is built into this 14 lb. superfine tripod. The top-plate can be set for 16mm. E.K. Cine Special, with or without motor; 35mm. DeVry and B & H Eyemo (with motor), and with or without alignment gauge.

## Tripod Head Unconditionally Guaranteed 5 Years

"Professional Jr." Tripods and C.E.C. Shiftover Alignment Gauges are used by the U.S. Navy, U.S. Army Air Bases, Signal Corps, the Office of Strategic Services and other Gov't Agencies—also by many leading Newsreel companies and 16mm and 35mm motion picture producers—for important work.

## SHIFTOVER ALIGNMENT GAUGE

★ This Shiftover device is the finest, lightest and most efficient available for the Eyemo Spider Turret prismatic focusing type camera.

★ The mole of the Shiftover attaches to the camera base permanently and permits using the regular camera holding handle if desired. The mole dovetail mates with the female dovetail base and permits the camera to slide from focusing to photographing positions for parallax adjustment. The camera can be locked in desired position by a positive locking device.

★ The Shiftover has a "stop-bracket" which prevents the camera from sliding off the dovetail base—and is provided with dowel pins which position it to top-plates of tripods having  $\frac{3}{8}$  or  $\frac{1}{4}$ -20 camera fastening screw.

FRANK C. ZUCKER

**CAMERA EQUIPMENT CO.**  
1600 BROADWAY NEW YORK CITY



# Using an Actual Town Instead of Movie Sets

By JOSEPH A. VALENTINE, A.S.C.

THE whole of an actual town used for a movie set! Backgrounds which, if duplicated in studio sets, would have boosted the production's set budget into fantastic figures, even for a major studio production! Intimate scenes, both exteriors and interiors, photographed against authentic backgrounds which would put to shame the best art director's attempts at realism!

That is the experience I have just had during four weeks of location work in Northern California filming Alfred Hitchcock's "Shadow of a Doubt." For four weeks we worked in the town of

Santa Rosa, filming both day and night exteriors, and a surprising number of intimate interiors as well, against the background of an actual and very typical American small city.

After viewing the rushes I'm convinced that "Hitch" has really started something in pioneering this idea. Not only

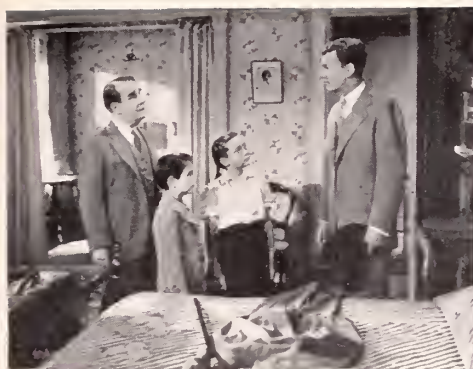
have we given our picture its background on a scale that couldn't satisfactorily be reproduced in studio-made construction; we've captured a note of realism which also can't be reproduced in a studio.

Actually, it's an old idea reborn: back in the days of silent pictures such location trips were fairly common. But during the past several years we've become accustomed to building whatever we wanted in the way of sets, whether it was a small bedroom interior or the exterior of an entire town. Production was much more convenient that way—

*Cinematographer Valentine (behind camera) and Director Hitchcock filming a scene on location. Note use of diffusing scrim overhead and "boosters" for modeling and back-lighting.*







especially for the sound man, at first, but almost equally so for the director and cinematographer, who found their phases of the work were more completely under control when working within the studio.

So, with the exception of Westerns we had got out of the habit of sending more than a skeleton company on location. It was so much simpler to build even large exteriors on the stage, or to film them as process shots.

#### 'Under' War-Time Ceiling

But today we *can't* build those sets. With a war-time ceiling of \$5,000 on new set construction for an entire picture the building of large sets like these is definitely out for duration. Yet we still need those sets; so we must go outside the studio and shoot the real thing.

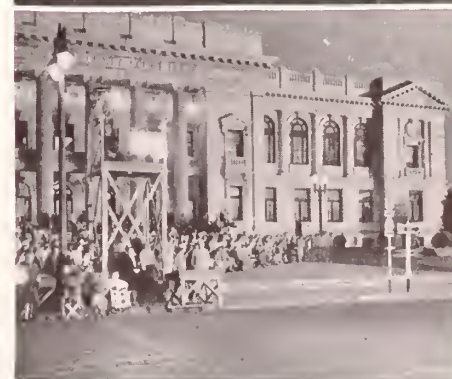
In many ways I'm convinced this is likely to turn out to be an advantage. Technical problems all along the line are likely to be increased, of course, but in exchange we'll get a note of realism in both background and camera treatment which is definitely in tune with what audiences want today.

Our Santa Rosa location was chosen because it seemed so typical of the average American small city, and offered, as well, the physical facilities the script demanded. There was a public square, around which much of the city's life revolves. There was an indefinable blending of small town and city, and of old and new, which made the town a much more typical background of an average American town than anything that could have been deliberately designed.

From the technical viewpoint most of our day exteriors were of a comparatively routine nature. The Santa Rosans were very cooperative, and most of our problems in these scenes were the ordinary ones of rigging scrims and placing reflectors or booster lights where they were needed.

In some of the scenes around the house we had selected to represent the home of our picture's family, however, we had some problems in contrast. In building a set of that nature we are accustomed to placing trees and the like largely for decorative value. But here they had been planted to provide shade—and they certainly provided it! The troubles we had in controlling the balance between the brightly sunlit areas

*Above, left, studio interiors strove to match natural lighting effects of interiors made on location. Center and right, day and night-effect scenes made on Santa Rosa location. Below, reading down, note realism of scenes filmed in actual Western Union office and bank, and large area of background illuminated in night-effect scene in public square. Bottom, getting set up for an early-evening night-effect shot. Note "open" twilight sky. All photos by Ed T. Estabrook.*



and the deeply shaded ones left me with an unending respect for what America's amateurs manage to achieve with their Cine-Kodaks under similar circumstances, and without the professional's opportunity of controlling contrast with scrims, reflectors and boosters!

#### A Matter of Lighting

The most spectacular part of our work was naturally the making of the night exterior sequences. We had with us two generator sets, ten 150-ampere arc spotlights, and the usual assortment of incandescent units—Seniors, Juniors, 18s, 24s, and broads—making a total of 3,000 ampere maximum electrical capacity.

With this we lit up an expanse of four city blocks for our night-effect long shots!

Most of the credit for this must certainly go to the high sensitivity of the Super-XX negative I used throughout the production. In emergencies like this Super-XX lets a cameraman get the maximum effectiveness out of every light; in this instance, we successfully lit up an area which only a few years ago would have demanded four or five times as much illumination to produce an inferior result. Yet on more routine shots, outdoors or in the studio, the same film gives me a pleasingly normal gradational scale which no other film can equal.

Oddly enough, one of our less spectacular night scenes proved really the harder problem. This was a sequence played around the city's public library. This building is a lovely Gothic structure, almost completely clothed in ivy. I think all of us were surprised at the way those dark green ivy leaves drank up the light. Actually, on our long shots of that single building we used every unit of lighting equipment we had with

*(Continued on Page 461)*



# 16mm. Gains in Studio Use

By WILLIAM STULL

Sixteen millimeter, already used by a number of studios for pre-production tests, is edging its surprising way into actual production camerawork. Encouraged, no doubt, by the successful use some firms have already made of short-subjects photographed in 16mm. Kodachrome and released in 35mm. Technicolor, the special-effects departments of several major studios are experimenting with the use of enlargements from 16mm. originals for process background plates, and at least one producer has made use of a three-color enlargement from a 16mm. Kodachrome original to provide a special color sequence in a major feature.

The cornerstone of this amazing development is the virtually grainless image afforded by a Kodachrome original. With the factor of grain eliminated, enlargement to 35mm., in either black-and-white or color, preserves the depth and definition of the 16mm. original virtually unchanged, and often exhibit a roundness and plasticity rarely achieved in conventional monochrome.

The currently important factor of film conservation plays a significant part in this development, too, for atmospheric background scenes photographed originally on 16mm. will consume only one-fifth as much celluloid and chemicals as would be required to film the same scenes in 35mm. Portability and compactness of the 16mm. equipment is another important factor in many instances.

Pioneering in this new development is Vernon L. Walker, A.S.C., head of RKO's special-effects department. He says: "With a succession of ambitious aerial and other service films coming up on our studio's production schedule, not to mention some of the Military Training Films assigned to us, we were faced with the problem of getting atmospheric and background shots under conditions where the bulk and weight of studio-type 35mm. equipment would be an almost insurmountable handicap. Working in a bombing plane, for example, there is very little room for a big 35mm. camera and its accessory equipment. Sometimes there is literally no room available.

"But if we could use a camera as small and compact as the average good 16mm. outfit these problems would be eliminated. We could probably get scenes which would be absolutely impossible with 35mm. equipment.

"Film conservation was another problem. With 35mm. film rationed these days, we have to think twice before exposing every foot of film, to be sure it will be productively useful. And many types of background action demand exposing a lot of film to be sure of getting what the director wants. Sixteen milli-

meter film is unrationed as yet, and besides in photographing any given action you'll consume less than a quarter as much film if you use 16mm. than you would using 35mm.

"After seeing what some short-subject producers had been able to do with pictures photographed in 16mm. Kodachrome and blown up for release in 35mm. Technicolor, I determined to experiment and see what could be done using 16mm. for our purposes.

"For making the enlargements, I turned to Carroll Dunning, of the Dunningcolor Corporation, who I knew had not only been doing a good deal of work in making 16mm. enlargements in both monochrome and color, but who was also familiar with the problems of special-process cinematography.

"He made 35mm. negatives from a variety of well-photographed 16mm. Kodachrome originals he had on hand, to serve as background-plates in our tests. The enlarged negatives were developed and printed by the Consolidated Laboratory, which regularly handles our studio's processing.

"We used these enlarged black-and-white prints in our tests, putting a standing figure into the foreground by the usual back-projection method.

"The results amazed all of us. The Kodachrome image is virtually grainless, and in our enlarged print—even on a big screen—there was, if anything, rather less grain than would be the case with most direct-35mm. background-plates.

"Where the original Kodachrome had been photographed with a good lens, and sharply focused, the enlarged print gave fully satisfactory definition. Naturally, the depth of field obtained from a 16mm. original shot with the short focal length lenses commonly used in 16mm. surpasses anything possible in 35mm.

"Our tests are by no means complete as yet, but so far they indicate that this method is perfectly feasible for black-and-white process scenes with a moving camera background, such as scenes from an airplane, a train, an auto, and so on. If there is any minor unsteadiness in the enlarged background-plate in such shots it is not of a kind to be noticeable.

"We haven't, as yet, completed our tests of this process for shots made with a stationary background camera. Using a camera which, like the special Bell & Howell professional 16mm. camera (described in *American Cinematographer* for April, 1941, page 170), is equipped with a first-class pilot-pin registering movement, and of course employing pilot-pin registration on both the 16mm. and 35mm. sides of the enlarging printer, it may be possible. On the other

hand, the peculiar shrinkage characteristics of acetate film may prevent it. We are making further tests to determine this.

"Fortunately, it is in the moving background shots for which we have found 16mm. is definitely suitable, that we have our biggest problem in getting background plates. For non-moving backgrounds, we can generally use either a 35mm. camera or, if no movement is involved, a still transparency made from either a black-and-white negative or a Kodachrome transparency.

"We have not as yet had an opportunity to make similar tests in color, but offhand there seems no reason why the same idea could not be extended to cover similar emergencies in Technicolor process work. In that case, of course, we would use a three-color enlarged print made from the Kodachrome original, and the saving in weight and bulk as compared to the three-film Technicolor camera would be even more important than in the case of black-and-white.

"One thing we have definitely learned, however. The 16mm. Kodachrome for this use cannot be photographed by merely handing anybody a 16mm. hand-camera and telling him to go out and shoot. Even though these plates are photographed on 16mm. film, they must be photographed with all the professional precision that would be used doing the same job in 35mm., and by men who know the technique of 16mm. and Kodachrome from personal experience.

"With these precautions, I believe this use of 16mm. will prove a very important contribution to special-effects cinematography."

Carroll Dunning, who pioneered the making of the enlarged negatives for Walker's experiments, has this to say about the making of 16mm. scenes for this purpose.

"The results we've achieved in these tests have amazed even those of us who were most enthusiastic about the possibilities of the idea," he said.

"But anything that is written about the use of 35mm. enlargements from 16mm. Kodachrome, either for process plates or for production use, must be prefaced by the statement that first of all the 16mm. Kodachrome original *must* be a really good one. It must be photographed in a first-class 16mm. camera, preferably with pilot-pin registration.

"It must be photographed through a really good lens, and in critically sharp focus. A Kodachrome original that is really sharp will make an enlargement with depth and definition which are amazing to those of us accustomed to the 35mm. standards. But a 16mm. original in which, for 16mm. projection, the definition is just adequate, will lose



so much in the enlarging that it will prove worthless for 35mm. use.

"Exposure and lighting must of course be correct. The exposure should be full enough to give reasonably open shadows in the 16mm. original. The best lighting, we have found, is a fairly flat one. This limitation doesn't apply, of course, to Kodachrome that is to be used only as a 16mm. film; but it does apply most strongly to Kodachrome that is to be enlarged. Back-lightings should definitely be avoided, and so should cross-lightings except where the cameraman can relieve the shadow side with reflectors or boosters.

"As a matter of fact, except in long shots where it is necessary to penetrate extreme distances, the best conditions for making Kodachrome that is to be enlarged to 35mm. will be found on slightly hazy days, when the direct sunlight is veiled by a thin layer of clouds or haze.

"Working from a color original, we can do a great deal in printing to control the contrast, tonal values and tonal separations by selective filtering. We use a fine-grained panchromatic negative stock—usually Eastman's Background negative—and we can do, if anything, a bit more in filtering than one can in direct photography.

"It is really uncanny the way the detail and gradation are preserved in an enlarged background, even after it has gone through the five steps between the 16mm. original and the 35mm. composite print—in effect, two duping operations if we count the rephotographing of the process-projected image as such, and two printings.

"I cannot speak too highly of Cine-color's work in making the enlargements and the three-color release-prints. The fidelity of color-values is thoroughly satisfactory. The steadiness, definition and general quality surprised and pleased all of us.

"The uniformity of the release prints has been another pleasant surprise. I have personally inspected close to 200 release prints, and as regards the color sequence there were remarkably few rejects; certainly no more than would have been the case had we used any direct-35mm. color process.

"All told, we're well satisfied with the results we obtained from our venture into using 16mm. for production pur-

poses. I would certainly have no hesitation about recommending it to other producers, or doing it again myself."

"As regards steadiness, we have obtained satisfactory results on moving camera background plates photographed with an Eastman Cine-Kodak Special, but by far the best results are had with scenes photographed with pilot-pin registration, like the special Bell & Howell Professional 16mm. camera, and the Maurer B-M. If several cameras or Cine Special magazines are used, their frame lines must be accurately matched.

"Even with the best cameras, though, we still have to find out whether the shrinkage characteristics of acetate film will interfere with using 16mm. enlargements of stationary-camera backgrounds, especially behind sets where there is a definite frame like a door or window.

"We have found, incidentally, that it is a good idea to rewind the original Kodachrome after exposure, so that the film goes through the processing machine in the opposite direction to that ordinarily taken. These machines are equipped with driving sprockets for single-perforated sound film and have teeth only on one side. These teeth fit the perforation rather tightly.

"This isn't serious for film intended for ordinary projection or 16-to-16 duping, but when the original is to be enlarged for a process plate, it is likely to strain the same perforation in the 16mm. film into which the close-fit registering pin of the printer fits. Hence it is best to run the film through the machine backward, so that the strained sprocket is on the other row of perforations, which is not so importantly used in printing registration.

"Finally—and one of the most important points in all of this—is the fact that the 16mm. original absolutely *must not* be handled or projected if a first-class enlargement is to be made. This cannot be stressed too strongly.

"I know everyone has the urge to 'run it just once' to see what the results are; but that one projection can irreparably

scratch the 'green' Kodachrome emulsion.

"The best method is to have an inexpensive black-and-white 16mm. reversal duplicate made, and project that. This will give all the significant facts about the scenes, and enable the director and special-effects experts to select the takes they want.

"If this cannot be done, it is possible, with careful handling, to run the 16mm. original once or twice through a Craig 16mm. viewer without damaging it and select the takes to be enlarged from that.

"How much film will this save? Well, the commonly accepted comparison is that a given action recorded on 16mm. film will require one-quarter the amount of film that would be required using 35 mm., figuring the differences in width, frames per foot, etc., between the two stocks. However, if you take area into consideration—including the area utilized for perforations, frame-lines, etc., I find it figures out actually to one-fifth.

"Therefore, if you figure on exposing the equivalent of 10,000 feet of 35mm. negative on backgrounds for a picture, you will actually have to use only 4,000 feet of 16mm. Kodachrome, and this, in turn, only consumes as much celluloid and chemicals as 2,000 feet of 35mm. Then, by carefully selecting the takes to be enlarged, you can reduce the actual amount of 35mm. negative used to only that actually required for the scenes used."

#### Successful Experiment

In another studio, this trick has been turned around to work the opposite way. In filming "The Moon and Sixpence," Producer-Director Al Lewyn decided a brief sequence in color would be dramatically useful in presenting a sequence in which a friend views the paintings made in Tahiti by the central character. Various factors, including cost and availability of color equipment, had to be considered.

Eventually, it was decided to film the sequence in 16mm. Kodachrome, and use a three-color 35mm. enlargement in the release-prints of the picture.

This proved entirely successful. The sequence was photographed by John F. Seitz, A.S.C., with the collaboration of Al Stensvold, A.S.C., one of the nation's top-flight 16mm. Kodachrome specialists. The Bell & Howell professional 16mm. camera was used.

*Left, 16mm. Kodachrome frame enlarged to 35mm. Center, test subject in front of process screen. Right, composite shot, using 35mm. enlargement from 16mm. for background plate.*





# SHOOTING ACTION MOVIES FROM A GUNSTOCK MOUNT

By KENNETH O. HEZZELWOOD

*St. Paul Amateur Makers' Club*

**F**OR smooth action pictures at high speed, try using a gun-stock mount for your camera!

When a duck leaves the water, it flies into the wind for the take-off, and then circles to follow its intended course of flight. One might follow the duck's flight with a tripod unless the bird decided to double back overhead, when the tripod-legs and the restricted tilt most certainly would get in the way of the photographer.

Moreover, few photographers can hold a camera still enough by hand to get a picture steady enough for satisfactory screening. The newsreel boys do it, but on a windy day, or from awkward positions, such as boats and airplanes, even their pictures rock to and fro on the screen, leaving much to be desired from the spectator's point of view.

But when the camera is mounted on a correctly balanced gun-stock, it is easy to follow the fastest action with better than average steadiness in the picture.

## Gun-Stocks Used in Minnesota

Gun-stock mounted cameras have been used in the St. Paul (Minnesota) territory for some time for making motion pictures of such hard-to-get events as skeet-shooting, quail hunting, fly-fishing for trout, and game bird pictures made

from an airplane. Local sportsmen have taken their cameras and gun-stocks on pack trips into the wilds of Mexico and Alaska, often making day-long hikes cross-country to get the unusual shots of rare birds or swiftly-leaping animals, and steady pictures have been made where a rifleman frequently would miss.

With a gun-stock, the camera can be in action as fast as a rifle, sighted along the top of the camera, and the lens-angle will take care of the rest, provided the focus and diaphragm have been set ahead of time for the footage and light conditions likely to be encountered.

Stocks to fit most cameras are now designed, and with their recent perfecting, gun-stock mounts adapted for the heavier Bell & Howell Eyemos and 70 DA's, and the Eastman Special perhaps will become items of standard equipment for military photographers.

Combat troops require their photographers to be out in the front lines, where tripod set-up would be impossible. Under such conditions, the gun-stock mount can be used from foxholes, or from camouflaged positions, and it is handled in exactly the same way the sharpshooter has been trained to handle a gun—prone on the ground, balanced on one knee, seated, or standing. It can be



*Individually designed gunstocks are available for a number of different types of popular 16mm. and 8mm. cameras, as well as 35mm. hand-cameras.*

fitted with a leather shoulder-strap to ease the strain of carrying the camera in one hand.

## Freedom in Following Flight

From Navy blimps or fast-traveling military planes, the photographer can follow the action with considerably more freedom than if the camera were swung from any type of swivel attached to the plane.

I became interested in these gun-stock mounts when I set out to make a few pictures of the more colorful song birds. There were lots of birds in the neighborhood, and it seemed easy to step out of the cottage and get the pictures.

But birds have a photographically unhappy way of flitting happily about from twig to twig, and from tree to tree—mostly trees which have barbed-wire fences in between. I don't like unsteady pictures, so with the patience of Job I set up and leveled my tripod, got a bead on the particular bird, focused my six-inch telephoto lens—and then repeated the whole performance several times before I managed to photograph even one bird.

Although gun-stocks have been used occasionally with still-cameras, Roy Swanson of the Swanson Camera shop in St. Paul pioneered in adapting the idea to motion picture cameras nine years ago, when he found that a tripod couldn't be set up in a duckboat. Swanson made one or two of the stocks, but just at that time Dillinger and his gang were roaming the Northwest with submachine guns, and the camera-gun-stock combination looked mighty like a submachine gun. So Roy forgot about it for a while.

## Two Makers of Gun Stocks

However, the idea persisted, and both Roy Swanson and Louis Finn, proprietor of the St. Paul's Robert Street Drug store made quite a number of these camera-mounts on special order. Although both dealers still turn out these stocks by hand, they are now producing them in larger quantities. Design patents cover their particular adaptations of gun stock mounts, Swanson featuring a stock tailor-made for each camera model, correctly balanced and beautifully finished in solid walnut. Finn emphasizes the addition of a standard gun

*(Continued on Page 453)*

*A gun-stock mount gives a steady base for following fast-moving action in the field. Note that in this type, shutter is released by gun-type trigger.*





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# WHAT IS DOING IN THE MOVIE CLUBS

**I**N THE Movie News, official organ of the Australian Amateur Cine Society, the August issue tells of a night of what we may be sure was unusual entertainment. J. A. Sherlock, internationally famed movie maker, arranged an evening for the benefit of the Royal Australian Air Force.

The programme included these pictures, all from the camera of Mr. Sherlock: "The City of Sydney," "Nesting in Birdland," "Nation Builders"—the American Cinematographer's grand prize of five years ago—and "Fledglings on Parade." The host is actively interested in the R.A.A.F.

## Victorians Install Projector

The Victorian Movie Makers has acquired a 16mm. projector—a Bell & Howell—which will be permanently installed in the clubrooms. The projector will be available to members and others who hire the clubrooms, providing the machine is operated by a member of the projection staff and that a hiring fee of 1 guinea is paid.

## Unusual Air Raid Shelter

The honorary treasurer of the Victorian Society reports a novel use for an air raid shelter he is building. He has made it sufficiently large to accommodate his family in the event of a raid. During off-raid periods the shelter has been made light-proof, and—oh, lucky householder—it will be used as a developing darkroom.

Then, with the negative in the critical period and the sirens sounding, we can picture the pandemonium that will follow the frantic appeals of the frightened

family to enter the sacred precincts of the verboten darkroom. That might be one occasion at least when the family darkroom is not to be so altogether despised as it usually is.

## Metropolitans Meet

Robert M. Coles, secretary of the Metropolitan Motion Picture Club, reports the first meeting this season was held Sept. 10 in the Empress Room of the Hotel Victoria. The program consisted of "Canadian Holiday," by Joseph F. Hollywood; "Gypsy Trails Abroad," by Leo J. Heffernan; "Under Your Own Power," by Sidney Moritz; short talk by the latest winner of Hiram Percy Maxim Trophy, Leo J. Heffernan; "Grand Old U.S.A.," by Heffernan-Ward; "Along Maine Shores," by Frank Gunnell.

## San Franciscans See "Redwood"

At the meeting of the San Francisco Cinema Club, which was held Sept. 15 at the Women's City Club, the following was listed:

Jesse W. Richardson, new member, showed and described his 8mm. black and white "Redwood Highway"; Charlie Hudson talked on snakes and showed a 200-foot reel of 16mm. black and white; Bob MacCollister showed his 1200-foot 16mm. black and white "Art in San Francisco." It was written and directed by Heinz Berggruen. The film abounds in interest for Californians.

## Long Beach Views Vacations

The Sept. 16 meeting of the Long Beach Cinema Club was devoted to the showing of vacation films. The gathering adjourned early to afford those present

an opportunity of watching the making of added scenes to the club's civil defense picture, "Fire from the Skies."

## Philadelphia Meets

The Philadelphia Cinema Club held its regular monthly meeting Sept. 8. Dr. R. E. Haentze showed his film of the Philadelphia Zoo as the lead of the program.

## Los Angeles Sees Pre-War Film

At the meeting of the Los Angeles Cinema Club Sept. 1 Ed Pyle at the projector, supervised the showing of Lloyd Bacon's "Angels Are Made of Wood."

Mildred Zimmerman projected "German Country Side Views," a part of her "Pictorial Diary of Pre-War Europe."

Harry E. Parker exhibited selections he had made from several thousand Kodasliques exposed by Guy D. Hazelton.

## Syracuse Has New Officers

H. E. Russell, secretary of the Syracuse (N. Y.) Movie Makers Association, reports the regular meeting of that organization was held Sept. 14.

The board of officers for the new year is D. Lisle Conway, president; N. Olney, vice president; W. H. Kellogg, treasurer, and H. E. Russell, secretary.

A letter received from the editor of The American Cinematographer regarding the position in which the users of sub-standard film found themselves in these war days was read at the meeting. As the secretary remarked in his letter: "We all appreciate the information you were able to give us, which means renewed energy to start the new year."

## B & H Issues Catalogue

Civilian Defense and other patriotic groups are turning more and more to the use of motion pictures in their training and morale meetings. Films have been found to be the best possible stimulator of attendance and enthusiasm under such headings as war reports, official government films, Victory Gardens, emergency first aid, industrial defense plant training, American history and principles, protection against fire bombs, and air raid warden work.

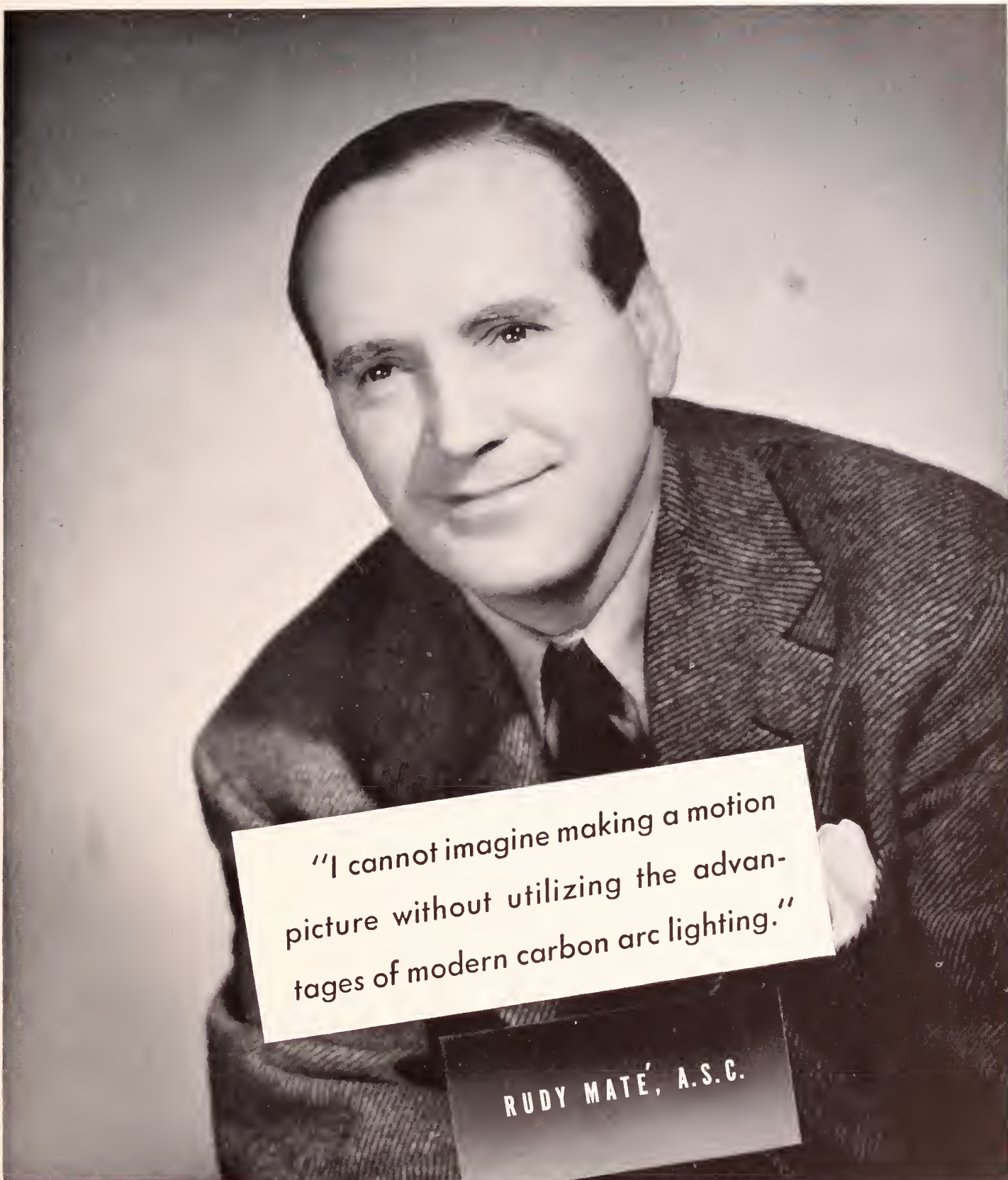
Under these headings the Bell & Howell Filmsound Library has just issued a catalog supplement, listing over 200 new films, all of them added since its 1942 catalog was completed in January.

Congratulations to Leatherneck Henry Freulich, A.S.C. Last month we chronicled Henry's enlistment as a buck private in the Marine Corps. As we go to press this month, a last-minute flash from one of the Leathernecks' big eastern bases tells us that Henry, after passing through the usual "boot camp" rookie period, was selected for officers' training, and is now Lieutenant Henry Freulich, U.S.M.C. Great work, Henry.



**INDIANAPOLIS STARTS A PICTURE.** The Indianapolis Amateur Movie Club is currently in production on a club-produced scenario film expected to run close to 1,000 feet, 16mm. Kodachrome. They're seen hard at work in the above still, which shows, left to right, Alfred Kaufmann, W. B. Worl, Past President Elmer Culbertson, G. A. Del Valle, Clarence Wetzel, Mrs. Elmer Culbertson, Dr. William E. Gabe, president, and Dr. Joe W. Sovine. Photo by Carl E. Luethge.





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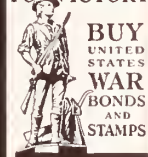
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# Home Pre-Scoring of Sound Films by Radio

By JON HALL

**W**HEN there's a musical or song sequence to be made in a professional picture, it's usually done by "pre-scoring." That is, the sound is recorded first, under ideal recording conditions, and the picture is made later, under ideal photographic conditions. To keep the singer in step with the pre-recorded sound of his or her own voice, the sound-track is played back through a loudspeaker while the picture "take" is being made. Then, when the picture and its pre-recorded sound-track have been printed together on a single strip of film, the result on the screen is every bit as convincing as though picture and sound-track had been shot together instead of separately.

The same trick can be worked with 16mm. sound home movies, and just as well, too. I can assure you of that because I've done it many times. My wife, you know, Frances Langford, is a singer; and since we've been married, I've recorded many of her favorite numbers, taking them off the air with a disc recorder as she broadcasts. I've shot thousands of feet of silent 16mm. movies of her, too—mostly in Kodachrome—at home, and the various places we've traveled together.

But after I bought a 16mm. sound projector, there always seemed to be some-

thing missing from those silent pictures. The disc recordings didn't seem quite complete, either, for though they enabled me to hear Frances, they couldn't show me how she looked when she sang. Sixteen millimeter sound-films seemed to be the answer . . . and then the idea of pre-scoring them made it complete.

## Takes It from the Air

Here's how we do it. When I know Frances is going to broadcast a song either of us particularly likes, I record it from the air with an Auricon 16mm. recorder. When this sound-track film has been processed, we're ready to shoot the picture.

So far, we've done our shooting in the projection-room of E. M. Berndt's Auricon headquarters, as this pre-scored sound-filming calls for a projector with a synchronous motor which can be interlocked with the synchronous motor driving the picture-camera. Professional 16mm. recording studios have them as a matter of course; but we civilians will have to do without them "for duration." After that, I've no doubt they'll become almost as familiar as filters to 16mm. amateurs, for home sound-filming on 16mm. is certainly the coming thing if we can judge by the popularity it's gained already.

The strictly photographic details of this part of the job aren't different from normal silent filming. You don't have to worry about microphone placement or mike-shadows, and you don't have to bundle your camera up in a soundproof blimp. All you need is a good 16mm. camera with a synchronous motor which will keep it operating at 24-frame speed in sync with the playback projector.

## One or Two Rehearsals

When you've done as good a job of lighting as you can, it's a good idea to have a rehearsal or two, while your singer accustoms herself (or himself) to singing in sync with the recording. This, by the way, isn't half as tricky a problem as it might seem if you haven't tried it.

When your rehearsals are OK, rewind the sound-track to its marked starting-point, and mark a starting-point on your picture-film, as well. Then throw the switch that starts the synchronous motors on the camera and the projector, and shoot your scene.

The simplest thing to do, of course, is to shoot the whole number from a single camera-angle. But if you want to vary it pictorially by cutting in close-ups here and there, you can do it. Just run the sound-track through to the point where you want the close-up—or really, just a bit before, to allow the camera and projector footage in which to get up to speed, and also to allow a little overlap in action for easier cutting. Mark a start-point on the sound-track here, and a similar start on the picture-film, and make your close-up.

When the picture-film has been processed, these marked points on the sound-track and on the various picture-takes will enable you—or the laboratory which makes the composite sound-and-picture print—to sync up the two films for printing, and cut the close-ups into the long-shot in the proper places, still keeping sound and picture in sync.

## Film Recording Preferable

It's possible to work this same general idea using disc recordings, synchronized either electrically or stroboscopically, but I think the film-recording method is preferable on several counts. It's much easier to edit, and of course as it gives you a single, composite sound-and-picture film, it is much easier to project. Also, modern 16mm. sound-on-film recording gives you much higher fidelity recording than you can get with a home disc recorder.

I've found another advantage in making my musical home movies this way is that recording my music from the air I can naturally get the best of "big-name" bands and orchestras which accompany my wife when she broadcasts—which is something that would be out of the question for an individual in direct recording. Of course, you can't use these recordings commercially, but for home use, it's quite all right, and certainly a great im-

*Jon Hall Kodachromes a scene on "The Arabian Nights" set.*





provement on a mere piano accompaniment or a homespun orchestra recruited from more or less musical friends!

Of course, not many cine-amateurs are so fortunate as to have a radio singer in the family the way I have, but that's still no reason why you couldn't try this method of pre-scoring your singing sound-films. I happened to be in a position where I could use the trick to put my wife's picture and her voice together: but the same trick can be used quite as well to put somebody else's voice on the sound-track to sing for your wife or girl-friend! As a matter of fact, ever since the earliest days of the talkies, voices have been "dubbed in" this way for non-singing professional actors, and usually so successfully that no one can detect the substitution.

#### Be Careful in Choosing Voice

If you carry the trick this far, though, I'd suggest that you avoid using (or should we say, borrowing?) a voice that's too well identified with some familiar screen or radio personality. Otherwise, it might be a bit embarrassing for the friend you've unexpectedly given such a surprising voice! Still, it probably wouldn't be quite as embarrassing as the story they tell around Hollywood lately, of an actor who sang unexpectedly and unusually well in one picture, and was promptly signed to do another musical—and then discovered that his voice-double had been drafted!

If you make the picture part of a pre-scored song in Kodachrome, as I've been doing, you'll naturally have to plan on having a Kodachrome dupe made to produce your final composite sound-print. In that case, you'll get the best results if you shoot your original with the fact in mind that it's to be duped. If you overexpose your Kodachrome original a trifle—shooting at, say, Weston 6 or 5 instead of 8 for daylight Kodachrome, and correspondingly for Type A—you'll get a much better dupe than if you expose as you normally would for an original that's to be used for projection. The slight overexposure softens both colors and contrast just enough so you'll get normal coloring and normal contrast in your dupe.

#### Make-Up Is Important

If, as in my case, your subject is a pretty girl, make-up is another point for careful consideration. Frances and I have tried all sorts of make-ups for our Kodachrome shooting, including some very special ones that different experts have recommended: but the best results, I've found, have been with a normal street make-up, and a rather light one, at that. By light, I mean thin; one that's overly light in tone, especially if it uses a lot of white face-powder, isn't likely to look any better to the Kodachrome film than it does to the eye. The film can detect and exaggerate an overly heavy make-up, too. In general, our experience has been that if a face—with make-up or without it—looks right to the eye, it will look pretty satisfactory to the camera.

Of course you can pre-score your pic-



*John E. Walter, president of Los Angeles 8mm. Club, who presided at joint meeting of Los Angeles amateur movie clubs*

## JOINT MEET OF WESTERN CLUBS PROVIDE STRONG ENTERTAINMENT

The Southern Cinema Club, composed of the amateur movie clubs of Los Angeles, held a joint exhibition at the South Gate High School Auditorium on the evening of Sept. 15. Fourteen of the twenty clubs were represented in the 250 persons in the vast auditorium. Five pictures were shown, four of them in Kodachrome. Four were in 8mm.

John E. Walter, president of the Los Angeles 8mm. Club, was master of ceremonies. Don Hunt, president of the Southern Cinema Club, opened the program with an address of welcome. The pictures were "Shoes," a vacation comedy photographed by Mr. Walter; "Nani O Hawaii," by Mildred Caldwell; "Red Cloud Rides Again," by Dr. F. R. Loscher; "South of Sonora," by Carl Anderson; "Navajo Land," by Agnes Schmitt.

All the pictures were of good contest rating and were accompanied by music.

tures this way using black-and-white film, too; but my vote is certainly for Kodachrome, for color is so much more real. And when you can get color, sound, and the music of fine singers and orchestras on your home screen, what more could any amateur want?

"South of Sonora" was the only exception to the 8mm. rule. In 16mm. it portrayed the beauties of the country surrounding Mazatlan, Mexico.

A picture of half a dozen years ago was Dr. Loscher's "Red Cloud Rides Again," an 8mm. subject made in his own neighborhood and with the simplest of materials, human and otherwise. The atmosphere is that of the covered wagon, an assault by Indians on a party of pioneers traveling across a desert.

When the accompanying music was permitted at times to fade the writer could not avoid noting the atmosphere of sharp tension that prevailed in the great auditorium. It was present more notably than it is many times when looking upon a picture made under the most favorable professional circumstances. It was a still house.

Dr. Loscher was in charge of the musical equipment. His picture was given real honors in the beginning when it was entered in the annual contest at that time conducted by The American Cinematographer. It was the first 8mm. subject to be awarded the grand prize in that classification, in spite of the number that had been entered, and against all of the 16mm. candidates.



# PROBLEM OF MAKING 10-REEL FEATURE SCENARIO FILM

By DAVID BRADLEY

THERE are more problems than just photographic ones in making a feature-length amateur scenario production! After turning out two ten-reel all-amateur features I can speak from a certain amount of very hard-bought experience, and looking back on it all I'm convinced that even the hardest technical problems were simple besides those of organizing a group of individualistic amateurs into a more or less cooperative production unit and getting things done.

First, for example, you have to have your story and break it down into a continuity or script. That's a headache in itself. Then you have to have actors—not only people who can play a part, but people who are ready and willing to work.

In addition, you've got to have a crew of technical helpers: camera and lighting assistants, set-builders and painters, custodians of costumes and properties, make-up artists, and, above all, a resourceful and always good-tempered assistant director.

Then you've got to plan on getting sets and locations, costumes (if it's a "period" story), and schedule things so you shoot

on the days the people necessary will be available and that everyone necessary will be at the right place at the right time. Oh, yes! There's also the little matter of getting your picture completed in time for a scheduled premiere, too!

If you don't think these details are headaches in the most painful sense just listen to some of the things my friends and I went through while filming my first feature-length movie, a ten-reel picturization of Dickens' "Oliver Twist." We planned it as a summer vacation project, and optimistically set ourselves a deadline by announcing a date for the premiere early enough so those who took part could be present before returning to school or college. Then we *really* began to learn about making pictures . . .

## Cutting Down Dickens' Story

The five-hundred tissue paged Dickens' novel "Oliver Twist" had to be converted into a screen play which would not last over two hours. When writing a screen adaptation I always like to preserve everything of the author's style rather than change the work to a conventional-pattern screen play.

Practically line for line of dialogue was incorporated into the completed picture. Such antiquated yet "Dickensy" language as this: "I hope so, after I am dead, but not before. I know the doctor must be right, Oliver, because I dream so much of Heaven and Angels; and kind faces that I never have seen before, when I am awake. Kiss me good-bye, dear! God Bless you!"

Such long-winded language today would be laughed off the screen. I felt, however, that this novel should be told in exactly the style of its day. To further enhance the period there was a tendency to adopt the melodramatic style of acting of that day. Several times I have been called for not bringing the language of the spoken titles more "up-to-date"—but I still think that I used the most fitting treatment.

After the script had been written and I had in mind exactly the type of character to fit each part, contracts were sent out all over the country to various high-schools, prep-schools, and colleges. By the middle of June a good two-thirds of the personnel had given their "yes or no," hours per day they were willing to work, and on what days, etc.

*Left, Bradley lines up a low-angle dolly-shot along the workhouse table. Right, Thirty people were crowded into a cramped attic on a summer night to make this scene—but even a 115-degree temperature didn't seem to dampen the spirits of the young extras.*





An applicant's file was kept on every person in the company down to the most minute extra, containing: previous experience, any talents, what you think you would like to do, how much time are you willing to give us, and days can or can not work.

We begin the production with two people who had had costume and property experience. "Oliver Twist" is definitely a "period" costume and prop show. More than two people were needed to sew, measure, design, and scurry up various period articles. The new inexperienced victims thus had to be broken in.

We borrowed costumes mostly from out of people's attics; usually they were people who wanted their costumes back untoned and unspotted. Indeed, some very fussy and particular mothers were reluctant and undecided whether to give up that garment which had been worn by great-grandfather and thus had a special sentimental value. After much pleading, bargaining haranguing, not to mention the assurance that the word "borrow" did not mean the "keep and never return," and with a sunny smile that was not always felt, and a "We'll pay for it if it gets damaged," quite an assortment of odd costumery was at last gathered.

#### Bargaining for Properties

Now it was time to break in our new costume crew and see whether or not they were going to stick. We found we were still shy on many needed articles so a bargain was struck with Roger Hill, Headmaster of the famed Todd School for boys, in Woodstock, Illinois. He said if we would clean up his entire costume, prop room and scene dock that he would let us have any article we desired.

The auxiliary crew and I were promptly shown up to this department which occupies the entire third floor of the main building. Such an unsightly mess confronted our eyes that we almost fled in terror from the scene. Costumes had been recklessly strewn about the floor from off their hangers, boxes of things had been dumped, and properties and furniture were turned upside down. We waded knee-deep in various brightly-colored materials with an occasional shoe-heel sticking out to scratch our ankles.

We rolled up our sleeves and started to work. As the electricity had been temporarily disconnected, we were practically working in the dark. After hours of back-straining lifting, hauling, assorting, stacking, bumping our heads on the low roof, and colliding in the dark with one another with bales of silks and satins, we completed the arduous task. I believe it was well worth the trouble, for we returned home with a solid carload of costumery and authentic props—but with two members of the personnel department dropping out.

After costumes were assorted, mended, darned and pressed, shooting was to begin. The owner of the house whose attic we wished to use for the workhouse dining room set finally consented

to let us remodel her attic and use her English antiques *if* we would come and go if and when her husband was at work. I believe to this day that that woman's husband never knew that his attic had been turned into a motion picture studio! We all got busy stretching canvas, painting flats, tacking, and all that goes with set-construction.

Finally the night for the first shooting arrived. Four indulgent fathers were playing the parts of the cranky members of the Workhouse Board. Small, raggedly-clad golf caddies, paid 15 cents a head, served as Oliver's fellow inmates of the Workhouse. I played the Bumble, lit the set, directed and did the camera set-ups.

Luckily the woman of the house had cleverly gotten her husband out of the way by treating him to a big dinner and show, so we were able to make as much noise as we pleased. The one stipulation was that we had to clear out by 10:00 P.M. I don't ever recall working in such a hot attic in all my life. The weather in Chicago is very hot and extra sticky in the summer, especially after a very sultry rain, which we had just had. Nights in Chicago seldom cool off.

#### Working in a Furnace

Altogether there were thirty people in the attic. Make-up was running and everyone was sweating and cussing in this 115-degree furnace. The situation was intensified by the hot, bright lights, heavy costumes, and cramped breathing space. There was no ventilation of any sort—not even a tiny window! But we got our scenes!

After this sequence was shot, we went directly over to the country club to use its cloak-room in the basement for the Workhouse Office set. Armed with a battery of lights and cameras, and trailed by impatient actors, we broke in on a big and very swank wedding in the main room. Quickly we did a disappearing act down the stairs. It was much cooler here and thus the scene was calmly and comfortably completed by 1:00 A.M. As a result of these late and strenuous hours we lost our fathers as future actors; but who cared as they were not to appear in any later scenes, and the "rushes" turned out Okeh!

After the first day I was still raring to go and complete the rest of the picture. (Forty-five more shooting schedules.) Other members of the crew did not share my enthusiasm and asked to be used hereafter only when absolutely necessary. I was indeed having a case of the

*Scenes from Bradley's production. Reading downward: a picturesque courtyard furnished a Dickensian street scene. One of Northwestern University's buildings "doubled" for London Bridge. A rustic bridge on a golf-course allowed "Monks" to drown his dog—between foursomes. "Fagin's" den was a problem in set construction as well as dramatics. Lighting effects were sketchy, but effective—sometimes—and a real church provided beauty and "production value" for the closing scenes.*

doldrums when in dropped a girl friend who had just had a squelched love affair with a friend of mine from school.

She still could not believe that she had been spurned and wanted to be near me,

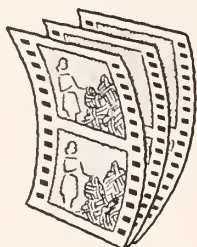
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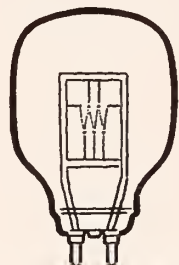


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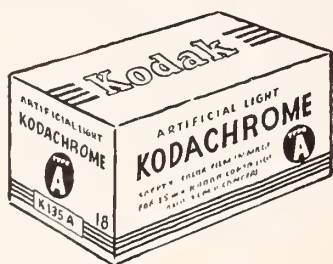
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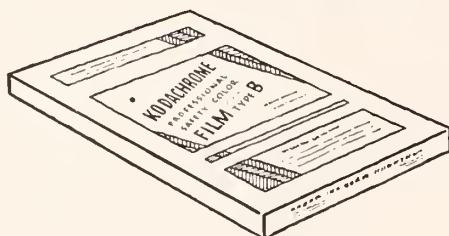
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## Shooting Action Movies with Gunstock

(Continued from Page 444)

trigger which actuates the camera mechanism in a convenient fashion.

In the stocks made for the round-bottomed Eyemo and 70 DA's, the stock provides more support than a tripod. A standard thumb-nut, threaded through a special jam-nut, provides pressure for tightening down the camera. The back of the camera rests against the stock, providing additional support. For the Eyemo with its wider base, a special off-set metal rest is provided at the bottom, so that the viewfinder may be positioned directly in line with the stock itself.

### Smaller Stock for 8mm.

Formerly white brass was used for the metal fittings, but for the duration fittings are of iron. The stocks are designed so that the camera can be loaded without removing it from the mount.

For 8mm. cameras a smaller stock is provided, while the stock required for the Eastman Special or Eyemo, although greater in depth at the camera end, still is very light in weight.

When photographing birds in flight with a straight-topped camera such as the Eastman magazine model, it is easiest to fold down the handle, and sight along the top of the handle, much as in sighting down the barrel of a shotgun.

The careful photographer will find the gun-stock of value in getting steadier picture of fast-moving objects, but the careless operator who thinks the gun-stock will save him some trouble when he ought to use a tripod, will ruin much of his film-footage.

The military motion picture photographer will find the gun-stock as indispensable for his camera as it is for the barrel of a rifle. G2—the section of officers who study photographs for their military intelligence value—will find that motion pictures of greater strategic value can be obtained when the cameramen have the extra flexibility possible in their camera work with the aid of "shoulder-fitted" gunstocks.

## Plan 17 Color Films

Opinions that the wartime emergency might curtail the use of color in theatrical productions seems disproved by announcement that among Hollywood's major producers there are no less than 17 feature pictures now being prepared for release in Technicolor. In addition there are another eight in production, six awaiting release, and seven already in release.

Those now in preparation include "Canadian Capers," "Dixie," "The Story of Dr. Wassell," "Frenchman's Creeek," and "Lady in the Dark," at Paramount.

Twentieth Century-Fox is preparing "Bird of Paradise," "Coney Island,"

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"Greenwich Village," "Hello, Frisco, Hello," and "Police Gazette Girl."

At Metro-Goldwyn-Mayer there are "America," "Kim," and "Salute to the Marines."

RKO has scheduled "Gibson Girl" and "Grand Canyon" in Technicolor, and Columbia is preparing "Cover Girl."

Warner's picturization of the big Irving Berlin-army musical "This is the Army," will also be filmed in Technicolor.

## Ensign Seid Honored

Several months ago it was our painful duty to extend the sympathies of the A.S.C. and its members to our friend, Columbia Lab-Chief George Seid, on the loss of his son, Ensign Daniel Seid, U.S.N., who was lost in action over the Pacific. Today we learn that a Naval vessel soon to be launched will be christened the "U. S. S. Seid."



# A.S.C. ON PARADE



Surprise visitor this month is Lt. Philip M. Chancellor, A.S.C., U.S.N.R., who flew in unexpectedly from somewhere out in the Pacific Battle Area on a brief leave. Longest in active Naval Service of the A.S.C.'s members, we understand Phil went through the Battle of Midway on one of Uncle Sam's aircraft carriers. He's since been promoted to Flag Photographic Officer of one of the Navy's Patrol Wings, where he's doing important photographic research work in a distinguished way. Phil tells us he sees Len H. Roos, A.S.C., F.R.P.S., occasionally, and remarks that Len is still the same, cheery fellow of old. "But," says Phil, "while it's like old times chatting with Len, his baby face is hardly flattering to my graying hair!"

Joe Valentine, A.S.C., tells us his present opus, "Shadow of a Doubt," will probably be his last "for duration." We understand he's waiting for the official documents to come through from Washington commissioning him an officer in Major Frank Capra's Signal Corps unit.

Rudy Maté, A.S.C., is another A.S.C.-member soon to join Major Capra's Army movie outfit. Goldwyn's Bop Hope-Dorothy Lamour starrer, "They Got Me Covered," is scheduled as Rudy's last 'till Victory is won.

It isn't official, but we also gather that Peverell Marley, A.S.C., is also Army-bound, or will be shortly. That man Capra certainly knows how to pick 'em!

James Wong Howe, A.S.C., is certainly getting to be quite the literary light. Articles about him have appeared, or soon will, in the Saturday Evening Post, Readers' Digest, and Spot Magazine. There are rumors, too, that as

soon as he finishes "Air Force," the Army has a spot for him.

Ever notice the resemblance between pictures of A.S.C.-Prexy Fred Jackman taken fifteen or twenty years ago, when he was Mack Sennett's mainstay, and Fred, Jr., A.S.C., today? It's really striking.

Add Rubber-savers: Loyal Griggs, A.S.C. He's one of the motorbike brigade—and you should see him when he gets his snazzy English putt-putt rolling, what with the long fringes of his tricky leather jacket flying in the wind!

Looks like it's getting to be John Mescall, A.S.C., Ice Specialist. Monogram has just signed him to do its big ice-skating special, "Silver Skates." He did two or three of Sonja Henie's most successful pix at 20th-Fox.

Karl Struss, A.S.C., back from locationing in the Sierras with the "For Whom the Bells Toll" troupe, tells of scrambling over mountains at the 10,000-foot level and praises the operative crew and grips who lugged the big Technicolor cameras all over the mountains. Karl's collecting envelopes with wartime censorship stamps, by the way.

## Eastman Issues Book for Makers of Commercial Motion Pictures

Topping their many years of extensive research, long technical experience in manufacture, and close cooperation with the motion picture industry, the Eastman Kodak Company announces a new book, "Eastman Motion Picture Films for Professional Use"—which is designed as a reference and guide for all professional photographers.

Covering both 35 and 16mm. films, the book presents the most exhaustive analysis of Eastman films which has ever been compiled. From a discussion of emulsion characteristics through graphic and detailed specification sheets, the book in every way fulfills its avowed intention of assisting the photographer to first choose the film best suited to a particular purpose, and, second, make the best use of the film selected.

The main part of the book, containing 72 pages, is divided into two principal sections and deals with the various types of negative, positive, sound recording, and duplicating films that are used in most commercial practice.

Floyd Crosby, A.S.C., reports his operative cameraman on Pare Lorentz' much-discussed "Name, Age, Occupation," Bill Clothier, is distinguishing himself as an Army photographer. He's already filmed two bomber raids over Naziland.

Country gentleman Harry Hallenberger, A.S.C., drives up from his between-pictures hideout in Laguna and drops in for a cheery "hello."

Harry Stradling, A.S.C., seems likely to be around MGM for some time to come. His option was picked up the other day.

Over at RKO, Frank Redman, A.S.C., gets the assignment to film "The Great Gildersleeve," starring the well-known radio comedian. Frank just finished photographing in "Here We Go Again."

Charles Lang, A.S.C., gets the assignment to film Paramount's "True to Life."

John F. Seitz, A.S.C., photographing a special ballet number with Vera Zorina for Paramount's "Star Spangled Rhythm." Johnny tells us he also has a number to do with Bob Hope—when Bob gets back from his tour of the outlying Army Camps. Seems as though Uncle Sam's soldiers rate ahead of Paramount!

The first section is devoted to a discussion of the various film characteristics, both photographic and physical. It deals also with processing, the use of filters, tropical handling, etc., and is intended as an aid to the interpretation of the specific data given for each film in the individual film specification sheets which make up the second section.

An eight-page supplement on the commercial use of 16mm. Kodachrome Film is also included. This supplement covers such subjects as lighting for Kodachrome, choice of subject colors, the making of sound records for use on Kodachrome duplicates, and so forth. It also contains specification sheets giving data on the properties of Kodachrome films, Regular and Type A.

The book is attractively and carefully printed, strip-indexed for ready reference, and bound in stiff covers with a semi-concealed Wire-O binding that allows the book to open flat to any page. It is priced at \$2.



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**Exchanging a sugar coupon  
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grocer's**

**Soldier and sailor guests  
at the family dinner table**



**Dad and the neighborhood  
share-the-car group**

**The "Sorry — No Gas" sign  
at local gasoline station**



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**Mother, groceries in basket, pedaling bicycle**



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# Photography of the Month

## THE BATTLE OF MIDWAY

U. S. Navy Production (printed in Technicolor).

Photographed by Commander John Ford, Photographer (2d class) J. P. McKenzie, and others.

This picture should be on everyone's "must see" list, and for more than one reason. It is the Navy's official record of one of our most spectacular victories of this war. It is, so far as we know, the first time an actual battle has been photographed in color. It is a remarkable demonstration of the immense potentialities of 16mm. for military cinematography. And the way the actual battle scenes have been assembled with well planned "cut-in" shots make it a moving, human document as well as an invaluable historical record.

With the exception of its opening and end titles and a map insert which indicates the location of Midway Island, "The Battle of Midway" was photographed entirely in 16mm. Kodachrome, and enlarged for theatrical release to 35mm. Technicolor. The results on the screen are perhaps the strongest argu-

ment that could be presented in favor of using 16mm. rather than 35mm. for combat camerawork.

We saw the picture in its 35mm. version, of course, and on the screen of an average-sized theatre. Viewed in comparison with a Technicolor print of a studio-made feature, the enlarged 16mm. would probably suffer: but combat camerawork does not permit the painstaking attention to photographic details that a major studio production does. What Ford and his associates have put on the screen is at the least better in technical quality than the average wartime newsreel, and has the very marked advantage of being presented in color.

The scenes showing the bombing of the Midway base by Jap aviators almost certainly could not have been obtained with conventional 35mm. equipment. The crucial battle action would in all probability have been over before the bulky standard-film cameras could have been got into action. The extreme focal depth possible in 16mm., and the simplified operation of these cameras must certainly have played an important part, too, in getting these battle scenes successfully recorded on film.

It is a matter of interest that we understand these scenes were filmed by

two magazine-type cameras of precisely the same type many hundreds of amateurs use for their home movies. The simplicity of changing magazines must have been invaluable under battle conditions. This type of camera also evidences one drawback for this type of work in that every time there was a bomb explosion in the immediate neighborhood, the concussion appeared to throw the camera out of frame for several frames.

It must be acknowledged as a tribute to the construction of these cameras, however, that they continued to function without other interruption in spite of the concussion and other rough treatment.

On two occasions, following bomb explosions close by, it will be noticed that the camera gyrates wildly and presents a series of highly unconventional angles on "flash" shots of falling debris. An interesting story lies behind these angles. We are informed that they were occasioned by the fact that fragments from the exploding bomb wounded Commander Ford, who dropped the camera. Its spring-driven mechanism, still running, recorded the bazaar angle-shots by itself!

Since but two of the Navy Photographic Unit—Commander Ford and Photographer McKenzie—appear to have been at Midway when the action occurred, it is inevitable that the majority of the battle scenes center around the bombing attacks made by the Jap planes while our own aircraft were out blasting the Jap fleet.

Plenty of action is shown in these scenes, however, including dive-bombing attacks by the Jap planes, our Naval and Marine gunners giving them the type of reply understood by Nipponese minds, and shooting down several of the attacking planes.

We also see taking off Army, Navy and Marine Corps bomber and fighter pilots in their pre-takeoff conferences—sometimes taking off to attack Japs already bombing the field—and returning.

In both photographic presentation and narration Ford presents these fighters, not as just so many robots flying weapons of long-range destruction, but as human beings—your neighbor's kid and mine. It lends a note of warm sincerity to the film.

The pictures do not attempt to conceal the destruction done to the Midway base installations. Most graphic, perhaps, are the scenes showing some of the wounded coming in—including fliers forced down at sea, adrift for ten or eleven days in a rubber boat—contrasted with the wreckage left by Jap bombing of the hospital, still with the red cross plainly marked on its wrecked roof. Better, perhaps, than anything in the picture, it gives an idea of what sort of

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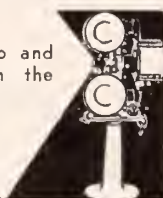
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All told, "The Battle of Midway" is a fine piece of camera reporting, done under difficult circumstances, and a magnificent piece of film craftsmanship in the way the battle shots and added scenes have been knit together to make the year's outstanding short-subject. Don't miss it!

## CROSSROADS

*Metro-Goldwyn-Mayer Production.*  
*Director of Photography: Joseph Ruttenberg, A.S.C.*

A great deal has been said both for and against the modern "increased depth" fashion of photography, and both good and bad pictures have been cited as arguments on both sides. Joseph Ruttenberg's contribution to "Crossroads" is unquestionably one of the most powerful arguments yet screened against the so-called "pan-focus" technique—or at least against its misuse under some circumstances.

"Crossroads" is a crisply black-and-white, but it does not employ the increased depth technique. And it is a much better picture because it doesn't.

Perhaps the outstanding example of this—in many ways, the photographically outstanding part of the picture—is the courtroom sequence which occurs near the start. The scene is a French courtroom. In French courts, the witness stands in a railed enclosure facing the Judges, and with his back to the spectators in the courtroom.

Ruttenberg handles these scenes magnificently. The principal players are shown throughout this sequence on the witness-stand, sometimes in long-shot, sometimes in closer angles. In these closer angles Ruttenberg paints some magnificent portraits with lighting and focus. The players are shown in forceful yet softly modeled portrait-lightings. The courtroom audience behind them is treated so as to provide a flawless background—just sufficiently defined so you know what it is and are conscious of it, yet not so crisply focused as to become an intrusive element in either composition or dramatic action. It is one of the most perfectly photographed sequences we've seen this year.

Ruttenberg's handling of the rest of the production is almost equally fine. His compositions and lightings are, as always, delightful. His treatment of the players is beyond reproach. All together, "Crossroads" is a picture well worth seeing.

## THE FOREST RANGERS

*Paramount Production (Technicolor)*  
*Directors of Photography: Charles Lang,*

*A.S.C., and William V. Skall, A.S.C.*  
*Special Photographic Effects by Gordon Jennings, A.S.C.*

*Transparency Process Photography by Farciot Edouart, A.S.C.*

Every name on this picture's multi-starred camera-credit title deserves the

highest praise, for between them they've made "The Forest Rangers" one of the most spectacular pictures of the year.

On the production side, cinematographers Lang and Skall have handled their assignment to perfection. The story doesn't lend itself to the spectacularly pictorial type of color camerawork some Technicolor releases do, but their compositions and lightings in both the interior sequences and the many exteriors are excellent.

The exteriors, indeed, will undoubtedly fill many a viewer with nostalgic longings for timberland vacation countries which spelled picturemaking vacations back before fuel and rubber became so scarce!

The interiors include examples of both

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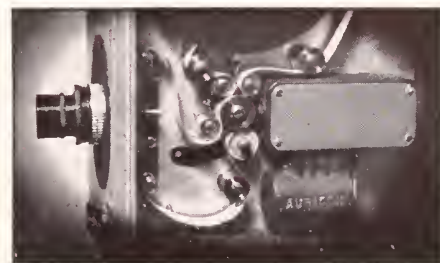
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high-key and low-key Technicolor treatment, and are excellently handled. To this reviewer, however, it seemed that some of the interiors in the early sequences in the ranger station were lit in slightly too low a key to match well with the intercut exteriors. It is possible, however, that this may be corrected in a later print, as the one we viewed did not appear to be a finished release-print.

The treatment of the players is excellent. Several of them seemed to appear to even better advantage than they have even in other recent Technicolor releases.

But "The Forest Rangers" is primarily a feather in the caps of the special-effects and transparency photographers. The forest fires (which incidentally burned for nearly eight weeks on Paramount's big open-air tank stage) are at

least as spectacular as anything we've seen on the screen. They offer an unusually interesting combination of photographic methods, combining full-scale action with transparency process projection and miniatures.

Some of the transparency projection work is on the largest scale we've yet seen attempted. Two of the industry's most powerful triple-head process projectors were used with twin screens giving a total expanse of back-projected image more than 48 feet wide. Some of the background plates used were, we understand, full-scale scenes of actual forest fires; others were miniatures. But the composite effect is one of the most convincing examples of special-process cinematography we've seen. Foreground and background blend together so perfectly one can't tell where one leaves off and the other begins.

The other miniature work is excellent, especially those of the airplane. It is actually very difficult to judge which are straightforward scenes of full-scale airplanes, and which are miniatures, except that we suspect the miniature shots are generally the better ones. In one or two of the miniatures, however, the trick is to some extent given away by overly vivid coloration of the backing. Some of these aerial miniatures show some of the amazing things Gordon Jennings' new miniature-carrying boom (see *American Cinematographer* for June, 1942) makes it possible to do with miniature planes. These scenes could hardly have been filmed without this newly-developed accessory.

The Technicolor print, while not, we believe, a final release print, was in most of its footage an unusually fine example of what the Technicolor laboratory at its best can do.

#### THE WORLD AT WAR

*Produced by the United States Office of War Information.*

Here is another wartime documentary which should be on everyone's "must" list. It traces in truly candid fashion the events of the last ten years, from Japan's first little moves into China up to the events which brought the United States legally into a war in which she had been at least a moral participant for more than a decade.

The film comes partly from newsreels, and partly from seized enemy propaganda films, including much that shows the Nazis' ravishment of Europe. How much of this was filmed under actual fire, and how much was staged by camera experts from Dr. Goebbels' propaganda bureau is something that cannot be determined until after the war. Certainly the German cameramen took pains not to show too many Germans falling!

At any rate, the film serves excellently to bring home to Americans a message its German filmmakers did not anticipate—the brutality of our enemies, and the force that must be used to crush them. There is much in the film to make us all thankful that the war has not as yet reached American shores, and to resolve, too, that it must never do so.

The combat camerawork is unusually interesting from the cinetechanical viewpoint. So, too, is the editorial work of writer-producer Samuel Spewack. It is to be regretted, though, that when showing the effects of the Nazi bombings of cities like Warsaw, Prague, Rotterdam, Louvain, and others, the editor did not also include stock-shots of the same cities as they were before the Nazi came.

#### NIGHT SHIFT

*Produced by Paul Rotha.*

*Photographed by Harold Young.*

This short documentary from England is another one well worth seeing. It tells the story of the night-shift workers in an English munitions factory—a factory staffed almost entirely by girls and women.

The camerawork of Harold Young is an outstanding feature of the picture. He handles the shop atmosphere a good deal more than ordinarily well, making remarkably effective utilization of both camera and lighting. His treatment of the players—all of them ordinary workers in the plant—is surprisingly excellent. His lighting, compositions and angles on the many scenes showing the girls at work on lathes, milling-machines, and the like, are both graphic and pictorially pleasing.

Yet the picture is essentially a simple picture, telling a simple story any of us can understand. It should be seen, both for its message and for its photographic and directorial technique.

#### MY SISTER EILEEN

*Columbia Production.*

*Director of Photography: Joseph Walker, A.S.C.*

Cinematographer Walker doesn't have many opportunities in this picturization of the popular stage play. It is designed for fast-paced laughs, rather than pictorial artistry. But Walker has done his usual, capable job on it. Wherever pictorial effects are dramatically possible, he provides them: for the rest, he provides a brilliant, comparatively high-key mounting for the incredible action and laugh lines.

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as I was one of Georgie's best friends. Immediately we exchanged our troubles. As I was badly in need of an assistant director, mob-handler, make-up artist, costume and property head, script girl, caller-upper and nerve soother, she was hired on the spot.

She filled nearly all of these jobs admirably, though toward the end of the production even her nerves began to shrivel up. Eventually I was at one time

## Problems of Making 10 Reels of Amateur Film

(Continued from Page 451)

the only one who knew we were going to finish the production, so there I was sitting up nights and mending trousers where they had been ripped by those eager to get home after a hard day's work!

Let me state here and now that if I had not had the assistance of 16-year-old Muriel Collins I don't think that I would have finished "Oliver Twist." She and I practically unaided completed this 48 sequence melodrama, and handled a complete personnel of well over a hundred wrangling and conflicting personalities. That day we first met, Muriel and I took oath that "Oliver Twist" would be complete before our deadline and premiere date, September 9, if it killed us. And it was done.

Muriel and I saw each other every

## Central Makes Railroad Film

A new sound motion picture "The Freight Yard," has just been announced by the New York Central System. Running 710 feet, 16mm. black and white, the film explains the purpose and operation of a great railroad yard. It was made as the first of a series designed to show "behind the scene" phases of modern railroading. The film was produced under the direction of Frederick G. Beach, supervisor Motion Picture Bureau.

Opening with a brief introduction showing fast freight trains in action it carries the audience through the many steps a train follows in a classification yard. Such operations as pushing the cars over the hump, car repairing, inspection routines, locomotive servicing, yard office procedure and many other fascinating but little known subjects are shown in detail. Free from advertising, the picture is designed to be informative, and it is expected that it will find wide use in schools, churches, service clubs and other civic organizations.

The picture is available in the following states only: Massachusetts, New Jersey, New York, Pennsylvania, Ohio, Michigan, Indiana and Illinois. Distribution will be handled from a number of film libraries located in New York Central territory. A list of these libraries may be obtained by writing to the Motion Picture Bureau, New York Central System, 466 Lexington Avenue, New York.

single solitary day from 8 A.M. to 1 A.M. when she was forced to take a well-earned vacation of one week, during which I confess I was rather lost for aid. I received letters daily from Muriel, up in the North Woods, asking me what happened today, and telling me she was going crazy for want of something to do.

## Muriel Gets Back to Work

Finally Muriel could stand this idleness no longer. She took the next train home and jumped right in and worked like a slave; she says like "a machine" . . . Muriel, I have said, was in charge of properties. She was confronted by live props as well as inanimate ones. She was in charge of a nearly mad dog, which we rented from Irene Castle's dog farm to serve as Bill Sikes' bulldog, "Bull's-eye." She also took charge of a canary which broke its wing from fright when a big tom-cat with predatory designs climbed up on the table on which lay the canary cage during another sequence.

At the end of her list was a family of mice. We used a pet mouse for a mood-setter in the spooky wharf warehouse scene. The pet mouse was housed in a cage. Muriel cleverly made a roadway of cheese, half the circumference of the floor. The end of the road led back to the interior of the cage. We were afraid that we'd never see that mouse again after we had photographed him, but good luck was with us for a change. The mouse miraculously and cooperatively marched straight back into his cage.

We had our full share of unscheduled thrills and near-accidents. One time when we were shooting the hanging of Bill Sikes, using Muriel's roof as a setting, we nearly lost an actor when John D. Lusinger, who was portraying the vicious Sikes, almost lost his balance and would have fallen three stories had he been a bit less agile.

Another time we were shooting from the interior of Fagin's Den the conclusion of Sikes death. Muriel was outside

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of a window through which we were shooting, perched on a narrow ledge. One slip would mean a two-story fall on to a slanting porch roof below. Her job was to hold the legs and torso of a dummy (Bill Sikes) which was to be lowered in front of the window to simulate the rope tightening around Sikes neck. She was lowering the dummy, trying to conceal herself beside the window, holding the lamp-reflector and at the same time trying to keep her balance.

Suddenly the light went out. From outside we heard a loud crash. We were sure that poor Muriel had fallen on to the porch roof below. We felt positive that she must be seriously injured, dead, or perhaps unconscious, as we heard no scream.

At that time the owners of the house were playing backgammon under the roof on the porch. They, too, quickly rushed

from the porch into the yard, hoping they might be in time to catch the dangling body of Muriel in their arms and thus save her from another fall from the porch roof to the ground.

Then we heard a faint groan from durable Muriel and on to the ground rolled the dummy and reflector—not Muriel! Quickly we gave our trembling hands to her and she nimbly climbed in through the window to Fagin's Den and safety. Incidentally we got our scene—and neatly done.

#### Unfortunate Experience

One of the most unfortunate experiences I have ever had in making amateur pictures is one I'm sure nearly every amateur scenario-film producer has experienced at one time or another; the story of the temperamental leading woman. The name shall obviously be omitted. In a previous picture, she had done a very commendable job, and had won a prize for excellence in a leading role. We had just the part for her and I told her we must have her in this picture at any cost. To this she replied the equivalent, "Oh, all right as a special favor to you, Davy. But I'll let you in on a little secret. I had really planned to go to Hollywood this summer."

If she were to suddenly drop out after many of her scenes had been taken it would naturally mean retakes. Those who had finished their shooting schedule and who were now taking their vacations would have to change their summer plans and come home for complete retakes, if "Oliver Twist" was to be finished. She had been building up to this by hiding on set when we were ready to photograph her. Finally after she had heard her name repeated and called after enough times to please her ego, she would casually appear from under a table or the inside of a closet. On several days this glamour girl decided on the spur of the moment that she did not feel in the mood for acting. As a result she would not show up for scheduled shooting dates.

We all sat around patiently waiting, with make-up on our faces, cameras loaded and ready to go. Knowing her as

we did we soon rubbed off the make-up and got busy building jail bars, etc., for the next week's shooting. One day, when she *did* arrive, after the shooting we asked her to give her word to every member of the cast and crew, each one personally, that she would be present tomorrow for that big mob scene. The company was lined up; they stood in a row and she gave each her solemn oath "cross my heart and hope to die" and every other symbol of promise.

#### One of Those Days

It so happened that two members of the cast, John D. Lusinger and Robert Hopkins were also members of an active summer stock company, "The Lake Zurich Playhouse." This was located about thirty miles from our headquarters in Winnetka. The playhouse gave performances every Thursday, Friday, and Saturday nights, which gave that company just four days to rehearse a show from scratch and produce it for the coming weeks attraction.

You can readily see that John and Bob had little time to spare. It so happened that on this particular big shooting day, the Lake Zurich company had rearranged their rehearsal times, to the inconvenience of everybody there, in order to accommodate Bradley Productions, and of course our leading woman.

The day arrived. Everybody was present, except our little darling. John and Robert were asked to come back tomorrow and were hurriedly shipped back to Lake Zurich and thus the playhouse was obliged to change their rehearsal schedule once more.

I can well imagine what the accommodating Lake Zurich people were thinking. We all felt pretty put out ourselves. At 6 P.M. I called our princess and told her that her absence had been noticed, and "Why in x x z æ ? ? \* \* \* ?". She quite nonchalantly replied that she had to go out to the farm that day, and assured me very sweetly that she would be present tomorrow!

Tomorrow became today, and she arrived—only an hour and a half late, as was to be expected, but present all the same. Absent, however, was a sorehead who soon called to tell us he wasn't going to be there today or any other day. He said that he *knew* he could never get "that girl" there. We hastened to assure him that she was present and even had her talk to him.

He thought her voice was a trick to get him there and said that he was going down to the beach to have a good time for a change. He told me that I was crazy for ever attempting such a fantastic enterprise and predicted that "Oliver Twist" would never be completed.

With this he hung up and fled to the beach. Did you ever see an irate director give a girl what she deserved for inconveniencing the whole company? Well, this best "scene" of our show wasn't photographed!

Later, after things had calmed down Muriel sanely and wisely got on the

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phone and called the quitter's mother, who started to swear at Muriel and the whole picture. She told Muriel that this movie wrecked her whole family and her husband was going to divorce her if the kid didn't quit being in Bradley's movie. Finally the parent was crying and telling Muriel all her troubles, from her childhood on up. Then insults were thrown across the wires faster and more furious than bombs over Berlin!

#### What Was Accomplished

Now to approach the more routine and less emotional conduct concerning sets and locations. We built six sets, as follows: workhouse dining room, where Oliver asks for more gruel and instead receives a thrashing; a wharf warehouse, located in London's Limehouse, where the secret meeting between the Bumbles and Monks took place; Felon's Dock, where Fagin, the merry old gentleman and ringleader, is executed; Justice Fang's courtroom; an Old-English apartment court which we converted into a London Street Scene; and of course Fagin's Den, wherein lies so much of the story.

Anita Willets-Burnham, author of "Around the World on a Penny," generously donated her 100-year-old log cabin, around which we were able to shoot four different locales. They are as follows: Sowerberry's Coffin Shop, Bill Sikes' Den, Mrs. Corney's boudoir, and an exterior set of the "Three Cripples' Tavern." The interior of the "Three Cripples" was the quaint and rustic San Pedro restaurant which was generously loaned by the proprietor, Bill Bruns of Wilmette, Ill.

At the crack of dawn one Sunday morning at 5 A.M. thirty extras trod sleepily to the San Pedro. It was now a very untidy mess, as it had not been cleaned up after a wild party the night before. This untidiness was very desirable for our purposes, and well served to make the San Pedro a perfect rendezvous for London's most sinister criminals of the Dickens' era. Most extras were very cooperative in arriving punctually by 10 o'clock. About 11:30, as we were just completing the last takes of the day, soda customers began to arrive all dolled up in their Sunday duds. Thus modern North Shore's fine tailoring rubbed shoulders with London slum's rags of other days!

Settings and locations were generally given consideration first, actors next. Sometimes shooting schedules were juggled to coincide with those on vacations, as Hollywood's schedules are often juggled for an actor who is working on two pictures simultaneously. Every Monday when times had been worked out which were convenient to the majority, Muriel got on the phone. It was her pleasure to see to it that every one was to be on set at the given time. Thus schedules were posted a week in advance.

#### Pursued by Rain

I recall once having made three trips to Woodstock, fifty miles from Winnetka, to take an exterior scene against Todd's

excellent iron fence and gate because it provided a perfect setting for the Workhouse inclosure. The first two trips out it began to rain just as we arrived. Without even taking the camera from its case we headed back to Winnetka and worked on future sets. On the third voyage, however, we had just finished with the scene and were just fading out when the downpour began!

Three days before the premiere we learned that the laboratory had lost a valuable roll of film for which we had been waiting for two months. Finally we retook the scenes and got the rushes edited into the complete picture the morning of the night of the premiere.

One who deserves mention for his punctuality is Dick Roth. Dick certainly contributed much of his time and did a swell job on the stills and completely fulfilled the tough and thankless job as assistant cameraman. I wanted to pin a medal on Dick at the premiere, but time did not permit. Equipment had to be set up and tested in the local cinema house and the cast had to be drilled on curtain calls . . .

But he deserves one, anyway!

### Using an Actual Town Instead of Set

(Continued from Page 441)

us—and we could very conveniently have used more if we had had them!

On some of our other scenes, though, the amazing speed of Super-XX opened up striking pictorial effects to us. There was one night scene, for instance, by the railway station, where with a bare minimum of front light to illuminate the players, a single 150-amp, arc spotlight placed nearly 200 feet from the camera cast a beam of three-quarter backlight which gave an excellent pictorial effect, and a most realistic one.

#### Speedy Films and Photofloods

Lighting up windows on the scale we had to do it in our night-effect long shots was something we could hardly do by the usual studio method of putting a broad or a sky pan behind each window. Here again the speed of Super-XX proved invaluable. We went to Santa Rosa well supplied with Photoflood globes—we must have had about a thousand of them—to use for this purpose. Sometimes we used them in inexpensive "clamp-on" reflectors, but often enough we would simply screw a Photoflood into

any convenient socket in the room which was to be lit.

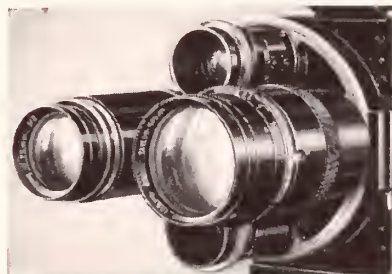
The results on the screen were precisely what we wanted, and by using the Photofloods we could avoid making an additional drain on our rather limited electrical supply, for the Photofloods could be used safely on any home or office lighting circuit.

On several occasions we made use of a little trick which is rather interesting. In setting up for several of the more intimate night scenes, we found that we could get a better composition and a more natural effect if there were two or three illuminated house windows showing here and there in the background, as from a house in the next block. Only, no house existed in that spot, with or without windows we could light up!

So our crew built up a plywood panel

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with a row of four window frames in it. This flat could be put in place anywhere that was necessary, and its windows lit up with photofloods. The effect on the screen was quite as convincing as illuminated windows in a real house, even though, as in some of the scenes made around the house used as the home of the principals, the panel was actually placed against a hedge! Of course, we had to be a bit careful not to shoot day effects from the same angle and give away the trick.

#### Range of Densities

By choosing the right time of day for our night-effect shots, we were able to get quite a range of densities in our skies, so that we could suggest twilight, early evening and night very convincingly. Usually night scenes on the screen are played very definitely as night, with inky black skies, and so on. After seeing our rushes on the screen I feel that some of our early-evening effects, with gray yet still luminous skies, and foregrounds suggesting the artificial illumination of just turned on street lights, may perhaps have extended the scope of night effects somewhat.

If we have, I am sure a great deal of credit must go to Director Hitchcock for his cooperation in having his cast ready to shoot when the light was right—often at an inconveniently early hour in the evening.

Frequently people who have seen these night scenes of ours have jumped to the conclusion that with such an area to illuminate we must have filmed them by day with Infra-Red film rather than actually by night. If only they'd seen how we worked to finish our night scenes before the Pacific Coast's "dim-out" order went into effect, they'd change their minds. All of our night scenes were filmed actually at night—and we just got under the wire, finishing the last one scarcely a matter of hours before the dim-out became effective.

Another very interesting part of the picture was making many of our interiors in actual buildings there in Santa Rosa. For example, we filmed a sequence in the city's bank, another in the Western Union telegraph office, and another in an actual cocktail lounge.

In the bank and telegraph office we had the inevitable problem of balancing inside lighting to a sunlit background seen through large windows. This balancing of course was taken care of by placing scrims in the windows and balancing the foreground lighting to the desired level. The result was in every way more natural than if we had tried to duplicate those rooms with studio sets, and of course more economical. Everything in the scene had a note of actuality that is difficult, indeed, to capture in a set.

#### Leaf from Amateur's Book

We made some interiors, too, in the house used for the home of our principals—chiefly scenes in the hallway, in angles shooting toward or through the front door.

In all of these practical interiors

filmed up there, we were naturally limited to some extent by the physical limitations of the rooms involved. We had to light entirely from the floor, in much the same way an amateur would in making a 16mm. home movie in the same room. However, we had the advantage of being able to use spotlights, and to position them for cross and backlighting, shielding the lens with goboes.

The results on the screen certainly don't look like studio-made interiors, but they've an air of naturalness we don't often get in studio interiors just because everything there can be planned for photography and lighting.

We've attempted to reproduce this effect, though, in the other interiors we've been making since we returned to the studio. I'll admit it's something of a strain, though, trying to keep constantly in mind that our lighting and angles must generally conform to what we could have done in a similar room up there on location—!

#### Understanding Director

In this, though, I feel I'm fortunate to be working with so camera-minded a director as Hitchcock. Many a director, under similar circumstances, would take it as evidence of poor cinematography if here there was an almost unbalancedly "hot" light coming through a window, on to actors and back-wall alike, or if there some player had to pass through a shadow which perhaps couldn't be avoided in real life in such a room, but in the studio could so easily be washed out by bringing in just one more lamp.

But "Hitch" not only understands

what we're attempting photographically, but constantly eggs me on, repeatedly asking me, "Are you sure this isn't too perfect?" or "Are you sure you could have done that in Santa Rosa?"

On his own part Hitchcock feels that working on actual locations like this, rather than studio-made reproductions, will result in a much more convincingly real picture. "A location like that," he says, "gives both of us—director and cinematographer alike — much broader scope in painting our picture. In some ways it was harder for both of us than making the same scenes on studio-made sets, but it paid us back with an atmosphere of actuality that couldn't be captured any other way.

"Joe got a convincing impression of realness into his scenes which will add immensely to the value of his contribution to the picture. For my part, I had a broader stage to move my actors upon, and I think that the melodrama of the story will be heightened by having such action take place in front of so very real a background.

"People talk about the realistic effects the Russians get by filming so many of their pictures against actual locations, rather than sets, and with every-day people, rather than professional extras, moving through the scenes.

They do it because they have to. Now that we're limited as to set-construction, we may find on our part that while we've lost something we have considered indispensable we'll have gained an element of realism which will more than offset it."

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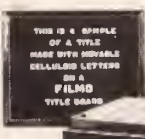
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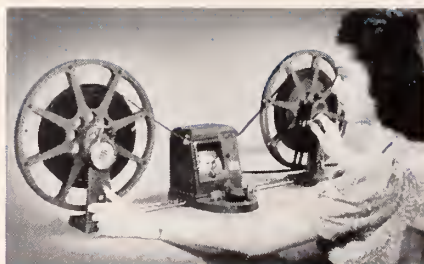


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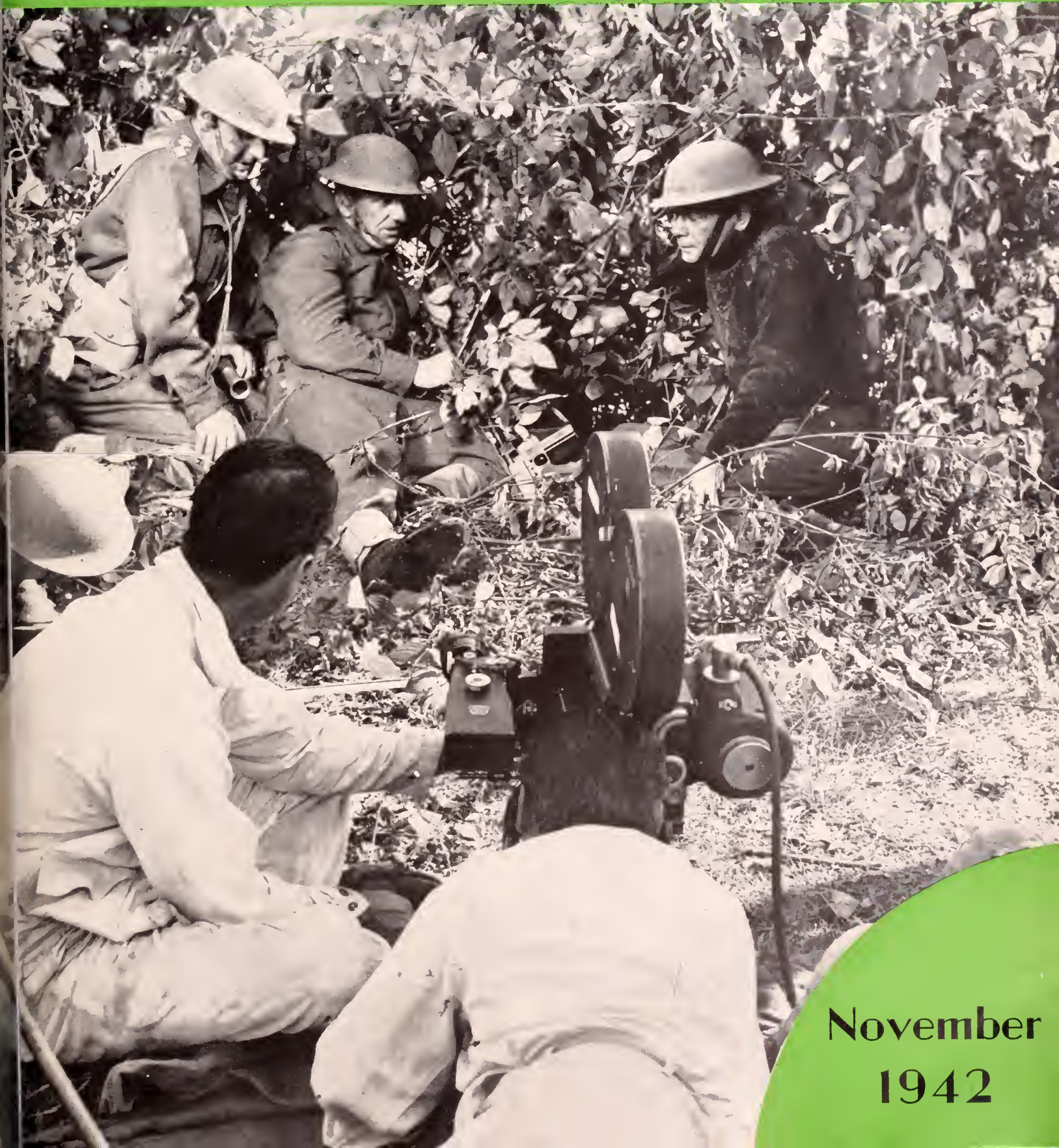


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November  
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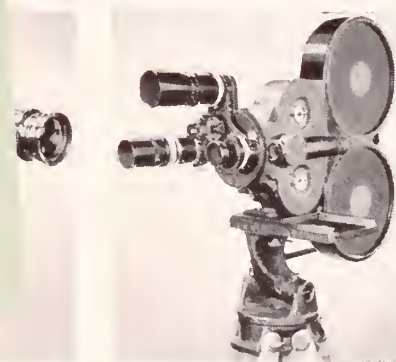
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# AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 23

NOVEMBER, 1942

NO. 11

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### The Front Cover

This month's cover shows William Mellor, A.S.C. (whose blonde head just shows at the lower right-hand corner of the picture) close-upping a couple of Canadian Commando troops for a scene from the Lester Cowan-Columbia Production, "The Commandos Strike At Dawn." Yes—we'd like to know the gadget being close-upped, is, too, but we'll bet it's bad medicine for Nazis! Photo by Ned Scott.

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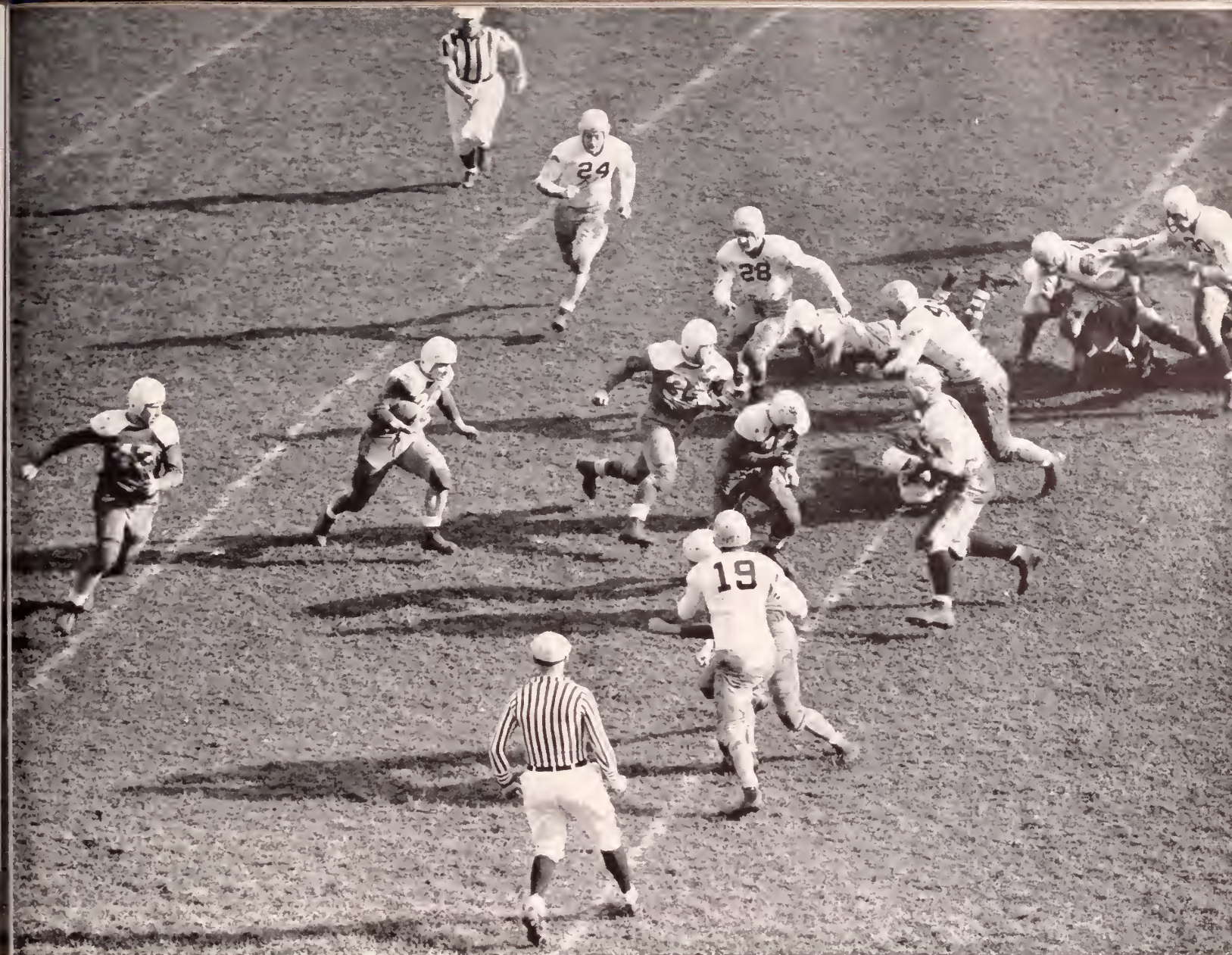
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# A RUSSIAN CINEMATOGRAPHER FILMS THE BATTLE FOR MOSCOW

From the Diary of

FEODOR BUNIMOVICH

FOR many weeks now we have lived in a car, listening to the purring of its engine, occasionally verifying whether the springs and tires are in good shape. There were three of us: cameraman Pavel Kasatkin, driver Pavel Shishko, and myself. We trust our old car despite several holes made by mine fragments, a twisted running board, smashed headlights, throbbing valves. There was not a single instance when she went back on us.

As if subject to the laws of mimicry, she has already changed her coloring three times. Originally black, she became a spotted green. Then, with the arrival of autumn, Shishko smeared her with mud and she became gray and quite invisible on dusty country roads or amid naked trees. When snow fell she changed into a white coat. Such are the requirements of camouflage.

After a two-hour ride we reach the first village where we stay for the night. In the morning we proceed into the thick of a forest where we find a well-equipped hospital. Dr. Merkulov, head of the surgical division, meets us with an apology, "I am sorry, but I cannot talk to you now. I haven't slept since yesterday and there is still a lot of work to do. Decide for yourselves what you want to film."

A young, fair-haired girl appears, trying to look older than her age. In the convalescents' ward she smiles as she points out two men. "Those are two friends," she says, "Victor Gaidamachenko and Lieutenant Valentine Gureyev, tank commander."

\*Extracts from the diary of the young Soviet cameraman, Feodor Bunimovich, who was awarded the Stalin Prize for his part in producing the documentary film, "Moscow Strikes Back."

"They were wounded in the same battle and brought here at the same time. But today they will have to part company. Lieutenant Gureyev is being signed out for duty. He took part in 21 attacks. We wanted to send him home for a rest, but he refuses to go."

Gureyev caught the last phrase, and says: "No, Tanyusha, from here I go only to my unit and nowhere else. This is not the time for a rest."

Later we film Gureyev's leave-taking. All the members of the medical personnel who happened to be free at the moment, and all the wounded able to move without help, came out of the tents to see the popular, merry tank-commander off.

While Gureyev is taking leave of his friends an ambulance drives up. A woman and three children are carried into the hospital. They are Maria Alenkina and her children: three-year-old Lena, injured in the head, and badly wounded Shura and Petya. The fascist pirates had bombed their village, where none but women, children and the aged remained. The ambulance men carry the children into the ward. There is a stern look on all faces.

"How can you talk of rest?" Gureyev remarks softly, turning to the doctor, "No, we must wreak vengeance," he adds loudly, "and I promise you, comrades, to avenge the children. The fascists will yet find out a thing or two about Gureyev."

Tatyana, blushing, hands the lieutenant a package containing a present prepared by nurses. Gureyev embraces and kisses her.

When the car disappears Tatyana, recollecting the scene, asks us, "Did you film that, too? Oh, can't you cut

that part out?" and her cheeks become tinged deep red.

At headquarters we were told that a trench mortar battery commanded by Semenets had fired eighty projectiles during the day, destroying two enemy machine-gun nests, two dugouts and a large number of men. Semenets was somewhere in the front detecting the enemy's gun emplacements. The battery was silent. I informed the commander over the telephone that motion picture cameramen were visiting the battery.

"Wait a bit," he replied, "we will establish the enemy position in a moment and then we will be ready to welcome you."

A little while later the order came for the battery to open fire on two enemy fortifications. One shot was fired, which we filmed. Then the range was somewhat changed and a second shot fired. The man in charge of the battery told us, "That apparently was adjustment fire. In a moment we will probably open fire from the whole battery. Get ready." . . .

We took up advantageous positions for filming and held the cameras in readiness. Ten minutes passed. . . . Fifteen minutes . . . No order came to open fire. I again rang up the observation point. The reply was: "First two shots fired destroyed both enemy fortifications. There is no need for more fire."

An episode for a newsreel was thus quite abbreviated. It was a success scored for the mortarmen, but it left us nothing to boast of. . . .

The first time we met him was at the front line. I saw a Red Army man running from the side of the enemy. Now and then he fell, rose, crawled. He was not wounded—why then was he running from the battlefield?

Only when he got to the trenches and lay next to me I realized that he was a signalman. He looked not more than twenty years of age. His big blue eyes were naive and his smile shy. His face and hands were covered with clots of sticky mud. As he lay near me he tried to regain his breath as soon as possible, in order to continue on his way. My questions he answered in monosyllables and obviously unwillingly. Several days later in conversation with Battalion





Commissar Storozh I mentioned the signalman I had seen.

"Why, that must be Fedoseyev!" exclaimed Storozh, "he is a wonderful fighter, bold, resourceful, finds his bearings quickly in any situation and under any conditions. There were instances when Fedoseyev made his way toward a tank that had gone far ahead, climbed up from the rear toward the turret, knocked as had been previously arranged. The tank crew then transmitted through him all the necessary information. You and your friends will do the right thing filming him in action."

We managed to film Fedoseyev as he was taking a report from the front line. Shell explosions did not deter him. In the most dangerous spots he dropped down and crawled on. His face was all scratches, and on his brow—despite a cold, penetrating wind—were visible large drops of perspiration. We see him running across a field toward a country road, darting into the bushes where his motorcycle is hidden. He starts the machine. His report will be delivered on time. . .

Carrying a white flag of truce a lieutenant of Yarovkin's brigade and an accompanying Red Army man crossed the front line. The lieutenant had a perfect command of German. Explaining to the German patrol that they were bearers of a truce flag, he asked to be taken to Colonel Neudind.

"You are surrounded," said the lieutenant, "to avoid unnecessary bloodshed the Red Army command urges you to surrender."

Indeed, Klin was then in an iron ring. To the Germans, Klin was an important strategic point—it served as a forwarding center for supplying the German army which had been assigned the task of enveloping Moscow. After losing 250 tanks, about 1,000 trucks, more than 100 medium and heavy guns and a great number of men, the German army was in retreat. However, the Germans disliked the idea of withdrawing from Klin. The negotiations brought no results and Soviet troops launched an assault.

Major General Chernyshev's troops attacked from the north, Colonel Lukhtikov's troops from the east and Major General Ivanov's mounted group from the south. Four days later Klin fell. Colonel Neudind fled westward, leaving over a thousand men killed.

We are now proceeding along this road. One or two miles from Klin we came across the first traces of the Ger-

mans' "planned" retreat. In ditches lie twelve cars with the wheels turned upward, two heavy guns, one medium sized tank.

A car in front—judging by the scattered documents and maps, a staff car—was hit by a shell and blocked the road. The trucks following were stalled. Our artillery in the meantime had continued to shell the column. The frantic Germans threw into the ditches not only the smashed cars, but some that were in perfect working order. All strove to get clear of the fire and abandoned everything. One German soldier, stricken by a bullet, remained petrified in a running attitude.

As we proceeded further along the road we came across even larger numbers of dead Germans soldiers and abandoned cars, guns, tanks.

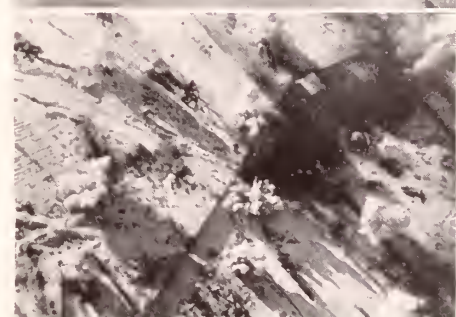
With difficulty we got as far as the village of Petrovskoye before nightfall. A vast field was covered with enemy machines. Kasatkin mounted one of them and filmed this amazing panorama from practically every angle. . .

When we approached Klin, our troops were entering the town. Automatic riflemen wearing white robes, cavalry, artillery, advanced past smashed and deserted German trucks and tanks, past demolished buildings, past numerous crosses with German helmets—frightful traces of the "victorious" retreat of the Germans.

We filmed the entry of the Red Army troops into Klin from the roof of our car. Then we proceeded toward Tchaikovsky's house where lived and worked the great composer. We found the gates smashed, the fence broken—apparently the place was used as a tank garage. Near the entrance lay a German motorcycle and alongside it, scattered in the snow, were manuscripts and Tchaikovsky's broken bust. In the rooms where Tchaikovsky had created works of genius, the Germans repaired motorcycles. The wall panels of Karelian birch were torn off, all wooden objects burned, stage models smashed.

"The German soldiers took a special fancy for a model of the ballet stage production, *Swan Lake*," explained the director of the museum, "they extracted all the figurines of danseuses and fought over the division."

Klin is practically burned to the ground. Before retreating the Germans blew up the bridge and even the town's new polyclinic. Near its iron



Frame enlargements from "Moscow Strikes Back." On opposite page, Russian troops attacking in the snow. On this page, above, tanks and tank-borne infantry in action; note (center) direct hit on tank. Beneath, Soviet troops in action. Note remarkable shot (second from bottom) as soldier is hit by a bullet. Bottom, a bombardment filmed from the air.

fence we met a woman in tears—she was the polyclinic's head doctor.

The Klin inhabitants rejoiced and gave a rousing welcome to the Red Army, which brought them liberation. Everyone tried to express appreciation by bringing presents. When a truck with Red Army men halted near Tchaikovsky's house a woman brought out a big plate of cakes for the men. . .

Artillery fire had somewhat subsided, the rumbling receding ever farther into the enemy's positions.

From the forest on the right our tanks appear, crushing trees as they rush forward. It is a tank regiment going into action—the regiment to which we knew our friend Gureyev has returned.

The tanks are followed by infantry.

(Continued on Page 500)





Right: Getting equipment to some of the set-ups wasn't easy! Left, above: Mellor (in foreground) lines up a shot of a Commando finishing off a Nazi; bottom, a Commando landing-barge used to carry troops and equipment to inaccessible locations.

work up to that speed, and the ground was rocky, besides. The young soldier who did the scene for us was very apologetic because he had to cut his speed down to 25 or 30 mph! Even so, he did it perfectly for three or four takes—and I don't think there was more than eight inches' difference in the location of his spill each time. I've seen actors who couldn't walk into a simple studio close-up and hit their foot marks half as accurately as that young soldier spilled off his motorbike at 30 mph!

And what those fellows couldn't do with knives and bayonets—! One trick they delighted in doing for us was to

## On Location With Canada's Commandos

By WILLIAM MELLOR, A.S.C.

**W**HEN we went up to British Columbia to film the Lester Cowan-Columbia production "The Commandos Strike At Dawn," we didn't expect to have genuine Commando troops playing themselves in our picture. The story, you see, deals with a British Commando raid on Nazi-occupied Norway, and British Columbia—especially the landward side of Vancouver Island—is an ideal location for duplicating the Norwegian fjords.

But when we got there, we found we had at our disposal not only some unsurpassed (and seldom filmed) scenic backgrounds, but also a cast of the toughest and most daring fellows I ever want to see—picked from several regiments of Canada's crack Commandos. The cooperation the Canadian Army, Navy and Air Force officials extended to us was beyond belief; it seemed as though no matter what we wanted, they would have it for us in an incredibly short time, whether it was a jeep or a 15,000-ton Auxiliary Cruiser.

When they found we needed men to play the parts of our raiding Commandos, and also to enact the Nazis upon whom the raid was conducted, they suggested using picked men from actual Commando units in training in that region. No, it wouldn't interrupt their training—"Not at all . . . in fact, it'll

be a jolly good thing for them, right in line with their regular training. They can do all sorts of stunts that'll make your picture just that more authentic. And it'll be like a regular holiday for them, you may be sure." After seeing those boys in action, I don't think either Producer Cowan or Director Farrow needed much urging to accept the offer of their services!

And the stunts those boys went through for our cameras, once we started shooting—! I thought that after working with some of Hollywood's ace stuntmen, I'd seen everything in the stunt line. But I hadn't, until I met these fellows from the Commandos! All I can say is that if when this war is over, any of our present stuntmen feel they've reached an age for retirement, they'll find among the men from the Commandos, and I suppose from our own Army's Rangers, plenty of daring young fellows already trained to hazardous stunt work, who can carry on their tradition very well indeed.

For example, we incorporated in one part of the picture a little bit of business that is part of the regular training of Commando motorcyclists. A Commando on a motorbike comes along a road, finds a Nazi ambush ahead of him, and promptly spills off his speeding motorcycle, drops behind it and starts shooting at the enemy before the motorbike has fully skidded to rest. In practice, they do this at better than 40 miles per hour; on our location, there wasn't enough space for the motorcyclist to

make a bayonet thrust that sent the "Nazi's" rifle spinning from his hands, then come up—all in the same motion—and knock him down with a rifle-butt to the jaw and almost in a continuation of the thrust, plunge the bayonet apparently through the foe's throat—actually, of course, just beside it, but with only fractions of a millimeter to spare. Ordinarily, you'd expect to have your actors go through dangerous things like that a bit slow and careful, and speed it up by underspeeding the camera. But these boys did it full speed—and loved it. How they ever missed each other, I don't know. But nobody got even a scratch. I'll tell the world I'd hate to be one of the Nazis those chaps tangle with!

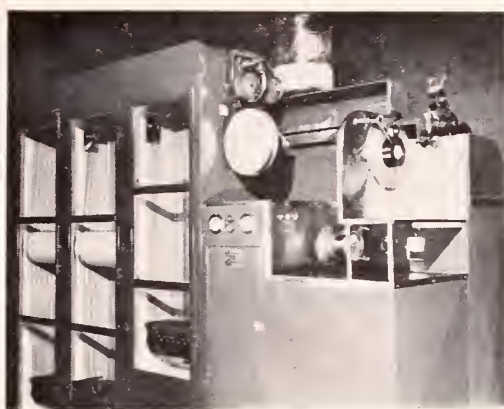
One part of the job, though, the Commandos didn't like. We had brought our own machine-guns, specially adapted to shoot blanks without jamming as regular machine-guns do when there's no bullet to build up the back-pressure that operates the gun. And these fellows didn't at all like the idea of using blanks. It would be much more realistic, they argued, to let them fire live cartridges—and much more fun for them to attack against the fire of real bullets! Somehow, we couldn't quite agree with them.

From the purely photographic standpoint, there wasn't anything particularly unusual about our location. Except, perhaps, our incredible luck with the weather. British Columbia is traditional-

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**T**HE military cameramen of World War II are going to be "on location" with a vengeance. With action likely to be under way in even the remotest corners of the earth, today's Army and Navy cinematographers will be doing most of their shooting far from established film-laboratory service. And especially in the tropical regions, one of the vital secrets of bringing back good pictures is to get your film developed as soon as possible after exposure. If you're shooting pictures for tactical study, there's very little advantage, too, if the film has to travel half around the globe and back before you can screen it.



## A Portable Developing-Machine For Field Service With The Army

By WILLIAM STULL, A.S.C.

But today's military cinematographers have this problem licked cold. They're taking their laboratories with them!

What's more, whether they use 16mm. reversal film, or 16mm. or 35mm. negative-positive, these front-line laboratories are capable of processing film with the same perfection you'd find in a Hollywood major-studio plant. They're small enough so they can be taken anywhere in a light truck, and simple enough so they can be operated by one buck private with no previous phototechnical training!

These revolutionary developing-machines are a product of the engineering skill of H. W. Houston, head of the Hollywood firm which bears his name. Designer of the developing-machines used in several of Hollywood's major studios, he has in these latest designs reduced film-processing equipment to what appears to be the ultimate in portability and simplicity.

Most sensational of these machines is probably the one designed for reversal-processing 16mm. black-and-white film. Though it has an output of 900 feet per hour, the machine is scarcely larger than an ordinary office desk: it measures 70 inches long by 30 inches wide by 54 inches high. Dry weight is 1500 lbs., so that the machine can be transported easily in a light truck, and wheeled into place on its caster wheels.

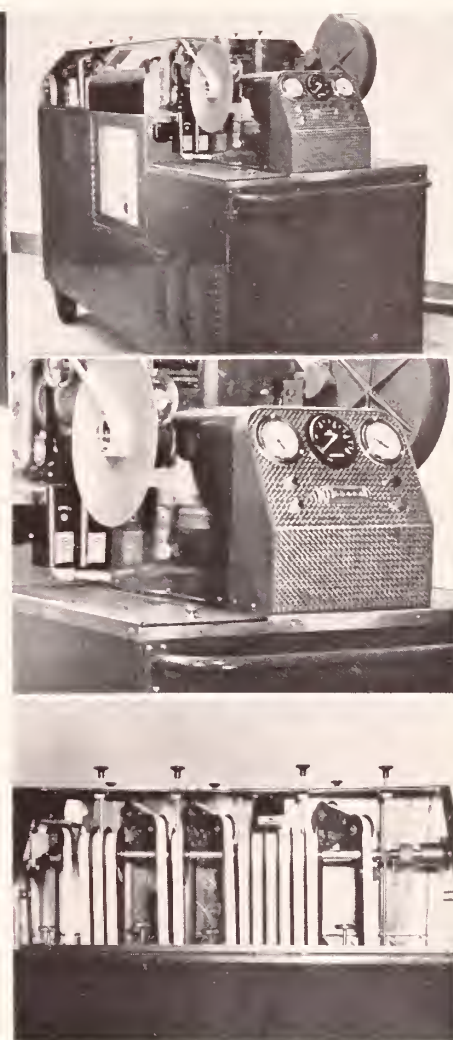
The design of the machine permits complete daylight operation. The exposed film is loaded into a light-tight magazine. This can be done either in a portable darkroom provided by the manufacturers, or in a changing-bag. The magazine is then attached to the machine, and the film clipped with an ordinary hand stapler to the leader

threaded through the machine. From this point until the film has been re-developed and fixed out, the film passes automatically through light-tight compartments.

As will be seen from the illustrations, the film-loops through the solution tanks are disposed at right angles to the longitudinal axis of the machine. During processing, the film travels first through a "dark" compartment on the right-hand side of the machine, passing through the first developer, stop-bath and rinse, and then past the "flashing" light through the bleach, clearing and second-developer tanks. Thence it crosses over to the left-hand side of the machine and returns toward the starting-point, passing through the hypo, rinse and dry-box compartments before being fed onto a take-up reel beside the feed magazine. The usual elevators are provided to permit loading a fresh magazine into the machine without interrupting its operation, to alter the timing of any operation, and so on.

The machine incorporates a unique double flashing light principle which is stated to afford remarkable latitude in the case of over- or underexposures. As the film passes from the first developer into the bleaching solution, it passes a fixed exposing-light which prints the image from the first-developed negative on the hitherto unexposed silver halides of the emulsion. This printing action is of course directly proportioned to the density of the first-developed negative image: strong, in the case of a thin, underexposed negative image, and weak, in the case of a dense, overexposed image.

The film then passes through the bleach and clearing baths which destroy the developed silver of this negative



Top, left: the 35mm. developing machine. Right, top, the 16mm. reversal machine; middle, control panel of reversal machine; bottom, bleach and second developer section of 16mm. machine, showing double flashing lights.

image, but do not affect the undeveloped silver halides carrying the just-exposed positive image.

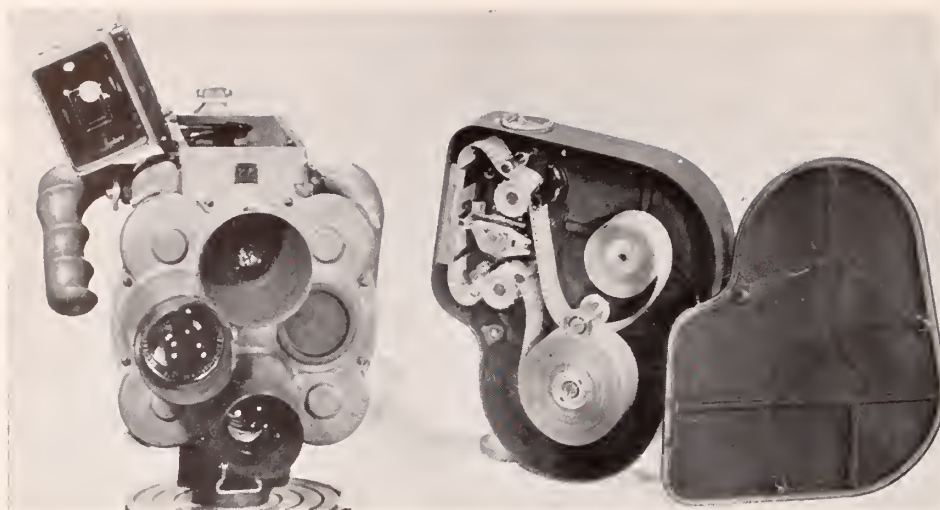
The film then goes into the second developer, in which this final, positive image is developed. In this section of the machine, the film is constantly exposed to a comparatively weak red light. This tends to intensify the exposure received by the residual silver which is being developed to form the final positive image. This action is automatically proportional to the exposure originally received by the film, as it depends naturally upon the amount of residual silver left after the development and bleaching-out of the first image.

In the case of an overexposure, which of course produced a dense negative image and left comparatively little residual silver for forming the reversed positive, the action of this second exposing-light is to intensify the exposure received by the residual silver, and hence the density of the final positive image.

The practical result of this double flashing, according to photographic tests made by Harry Zech, A.S.C., the firm's photographic consultant, is stated to be

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Cunningham's Combat Camera and its film-magazine. Note studio-type pilot-pin registering movement, and unique take-up drive.

# The First Real Combat Camera

By WILLIAM STULL, A.S.C.

**T**HIS war, it becomes increasingly evident, is going to be fought almost as much with cameras as with guns. Already the U. S. Army, Navy, Air Forces and Marine Corps have put hundreds of cinematographers into the field to bring back a living record of this global war. By the time our forces grow to their full strength, the number of these combat cameramen may well run into the thousands. Their cameras will bring back actual records of front-line operations on land, at sea and in the air; some for purely tactical and technological study, and some as documentary-film reports to the American public.

Up to date, most of this military camera-reporting seems to have been done with the standard type of 35mm. and 16mm. cameras already available. But a camera that is ideally suited for normal studio cinematography, or for portable use by commercial and newsreel cinematographers under peacetime conditions may not necessarily be so ideally adapted to the use of a soldier-cameraman in a South Pacific foxhole, or a sailor-cinematographer on convoy duty off Arctic Murmansk, or an aviator in a Flying Fortress 30,000 feet in the air. For their use, a combat camera must combine sturdiness with simplicity, and foolproof operation with precision.

Just such a camera—probably the world's first motion picture camera specifically designed for combat use—has been perfected by Harry Cunningham, one of Hollywood's most brilliant camera

designers. Sample prototypes are now undergoing tests by the various military photographic services, and when approved, the camera can be put into mass production immediately in any plant the authorities may designate.

In design and operation the new camera is revolutionary. While it may be used on a tripod, it is designed primarily for hand-held operation. But instead of using the conventional box-form shape or single-hand support of most hand-cameras, the Cunningham Combat Camera is designed in gunstock form. It gains additional rigidity by borrowing the two-handed pistol-grip principle familiar in aerial cameras.

By means of these principles, the new camera is probably the steadiest hand-camera ever built. In tests it has proven possible to hold steady on a stationary shot with a 10-inch telephoto lens!

Though the camera in its present form uses 35mm. film (a 16mm. adaptation will probably be made), it is of the magazine type—but refined to a degree of professional precision heretofore unknown.

The magazine contains the 200-foot film load, together with the entire film movement and take-up. The movement itself is an exceptionally accurate one of the professional pilot-pin registering type. Two sprockets are used, one above and one below the movement.

The take-up employs a uniquely simple form of compensating drive which eliminates belts, friction clutches, and similar complications, and is almost com-

pletely foolproof. As will be seen in the illustration, the film feeding out from the feed spindle passes under a spring-tensioned idling roller, the edges of which also contact the take-up roll. This is the sole drive to the take-up. Naturally, it compensates automatically for the differing sizes of the feed and take-up rolls: as one foot of film is fed from the feed spindle, it automatically drives the take-up roll to take up precisely one foot of film from the movement.

The angular deflection of this roller and its supporting arm also operates the footage-counter on the outside of the camera.

The film-magazine is of course loaded in a darkroom or changing-bag. This operation has been so simplified that it is easily done under such conditions. As a matter of fact, the Cunningham movement is probably easier to thread—even in the dark room—than the conventional Bell & Howell or Mitchell studio-camera movements.

The magazine is then simply dropped into the camera, through a hinged opening at the top. A slight downward push slides the magazine completely into place, and automatically engages the drive and footage-counter connections.

The camera is electrically powered. A small electric motor in the gunstock mount drives the mechanism, and is powered from two small radio-type "B" batteries which may be contained in a small pack clipped to the user's belt. These batteries will power the camera for several thousand feet of film, and are easily replaced in the field.

Three camera speeds are provided—16, 24 and 48 frames per second. The speed-control is a small button sliding in an arc-shaped slot at the left side of the camera. For checking speeds, provision is made for attaching a tachometer.



Photographer (1 Cl) B. Maggins using the Combat Camera. Note ease with which it permits following a moving object like an airplane at almost any angle.





Above, left: Lt. A. L. Gilks, A.S.C., U.S.N.R., using the camera. Note belt pouch holding batteries to power driving motor. Right, Designer Harry Cunningham with his new Combat Camera. Below: Right- and left-hand views of the Combat Camera. Note simplicity and accessibility of all controls.

meter to the main drive-shaft at the right side of the camera.

A four-lens turret is provided, and in the present model, 35mm., 75mm., 6-inch and 10-inch objectives are fitted. These were chosen by members of Commander John Ford's Naval Reserve Photographic Unit as being the most useful range for combat camerawork.

Each lens is provided with its own diaphragm calibrations, operating on a quadrant adjacent to the lens-mount. In use, the operator need merely extend the index finger of his left hand from

the hand-grip, to operate the diaphragm control. A finger-operated catch nearby releases and rotates the turret.

A single focusing control near the right-hand grip focuses all four lenses. For this, a single lever sliding along a quadrant is used. It may be operated by the thumb, or by the ball of the right hand, as may be individually convenient. Two focusing scales are provided along the quadrant, one for each of the two short-focus lenses. The two long-focus lenses are calibrated for only two points—infinity, for general use,

and 35 feet, for slating identification.

The method of focusing is unique. Instead of rotating the lenses in their mounts, or moving the lens-board in and out with relation to the film, the film and magazine are moved in and out in relation to the lenses. This is made possible by means of a splined slip-joint between the main drive-shaft and the nipple connecting the drive with the magazine. In turn, it permits a much more rigid construction in the front-board and turret, as the lenses can be

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## Aces of the Camera XXII: Arthur Edeson, A.S.C.

By WALTER BLANCHARD

**A**RTHUR EDESON, A.S.C., didn't intend to become a cinematographer when he made his start in the industry some thirty years ago. But since the advice of a far-sighted friend put him on the right side of the camera, he has carved out a career as one of the all-time "aces" of the camera profession. He has probably photographed more real, honest-to-goodness million-dollar pictures than any other man in the world.

Within the last twenty years alone, he can point to a list of some 34 pictures which represent an aggregate production investment of more than \$35,000,000. Among them are some of the most memorable films—both silent and sound—of cinema history; others are remembered by showman as being among the

industry's top money-makers. All of them stand out as memorably well-photographed pictures in their respective periods.

Among the silent films you can mention three of Doug Fairbanks, Sr.'s, finest films, "The Three Musketeers," "Robin Hood," and "The Thief of Bagdad."

Among Edeson's sound-film achievements are "In Old Arizona," the first outdoor "talkie;" "The Cock-Eyed World," one of the most successful pictures to ever hit the box-office; "All Quiet On The Western Front;" "The Big Trail," which Edeson photographed on the now happily forgotten 70mm. "Grandeur" film; and "Mutiny on the Bounty."

Edeson's versatility is indicated by the fact that he has filmed some of the best-remembered horror films (always a cinematographer's favorite, since they give such opportunities to play around with effect-lightings) as "The Invisible Man," and "Frankenstein," as well as a long succession of the fast-paced Jimmie Cagney-Pat O'Brien Army and Navy "action" pictures.

More recently, Edeson's camera has turned out such films as "They Drive By Night;" "The Maltese Falcon;" the battle scenes for "Sergeant York;" "Across the Pacific;" and "Casablanca." He has just been assigned to direct the photography of Warners' big musical, "Thank Your Lucky Stars," which represents an almost incalculable investment in celluloid reputations to be made or marred by the camera.

But back in 1910, when Arthur Edeson first ventured into the moving picture business, he certainly had no visions of a career like this. True, he was a successful portrait photographer in New York, but overwork and the peculiar feast-or-famine conditions of portrait photography—wondering where your next dollar is coming from for ten months of the year, then slaving day and night for two months to try to catch up with the Christmas-portrait rush—had given him an urge to get out of the rut and into some new line of work.

So one fine day he went out to the old Eclair Studio at Fort Lee, N. J., and applied for a job. At least, he started to apply. While he was sitting in the outer office, waiting to see somebody, a man came in and, pointing successively to several of the men who were sitting there waiting, said, "I'll take you—and you—and you. Come with me."

Arthur was one of those selected. And once inside the mysterious recesses of the studio, he found he had been hired—as an *actor*! Luckily, acting wasn't entirely unfamiliar to him, for he had done some amateur and semi-professional work presenting dramatic recitations from time to time. So, as he tells it today, he slipped easily into it, and before long was an established and successful member of the studio's acting company.

But while movie-acting was interesting, he couldn't quite get the love for photography out of his system. After a while, in his spare time, he began to make portraits of his fellow-actors. When the troupe went out on location, he'd snap between-scenes portraits outdoors; sometimes, he'd make more conventional portraits in an unused corner of the studio stage. At nights he would develop the negatives and make the prints in an improvised darkroom at home.

Those portraits must have been good, for they caught the eye of one of the studio's ace cameramen. After looking at several of them, the veteran told Edeson, "You're wasting your time as an actor, son. Why don't you switch over to the other side of the camera, where

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**M**OST industrial and training films—especially when they are made in 16mm.—have to be made on budgets much smaller than those of even the quickest of Hollywood “quickies” and short-subjects. Careful and detailed pre-production planning is therefore the keynote of success in this field. Lack of such planning has been the reason why many a hopeful producer has gone to the rocks, and in the process given 16mm. production a blackeye it did not deserve.

The first thing to be determined is of course whether or not the type of production contemplated can be successfully filmed with the equipment, facilities, financing, etc., available. This may seem rather elementary, but yet in the making of industrial and educational films in the past, and training films more recently, it has surprisingly often been overlooked.

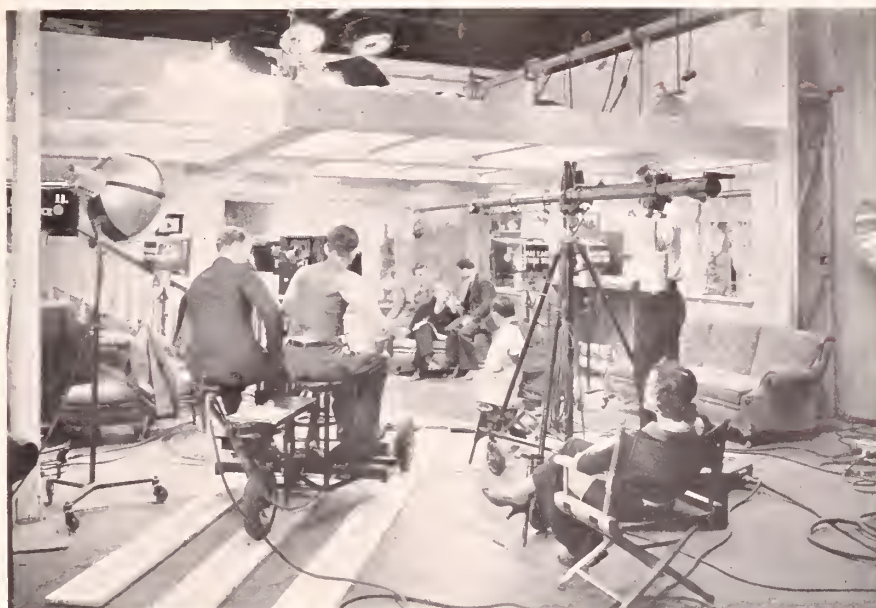
For example, the simplest type of production—the type which can be shot silent, with post-recorded narration put in later—can be handled with only a minimum of camera and lighting equipment, and frequently without the need of studio stage facilities. The picture can be photographed with almost any good 16mm. camera, such as the Eastman Cine-Special, the 70 series Filmo, Victor, Bolex, etc., and the recording handled by any commercial recording studio, in either 35mm. or 16mm.

On the other hand, the producer planning to film a synchronous dialog film must plan on having available, either through ownership or rental, a fully soundproofed studio with ample lighting equipment (at least 1,000 Amperes or more), a synchronous drive, sound-proof blimp, and dolly for his camera, synchronous recording and re-recording equipment, more complicated editing and synchronizing equipment, etc., not to mention facilities for designing and building sets. In other words, virtually the same equipment and facilities, though in 16mm., that would be required for a comparable 35mm. production.

In some instances, where a training or propaganda film made largely in field or factory is to combine offstage narration with sequences of synchronized dialog (as in Paul Rotha's British-made “Night Shift”), it is possible to plan things so that these dialog sequences can be handled by a system of post-recording which has been successfully used by the author and others in making industrial and educational films. This naturally simplifies the problems of equipment, studio facilities, and actual shooting.

Especially under today's conditions, it is often not possible to construct in the studio sets representing factory production lines, and the like, while it is equally impossible to secure really satisfactory recordings on the actual location.

In theatrical 35mm. production, such problems are usually met by using background projection, but in 16mm., for a variety of reasons including unavailability of equipment, this system has seldom been used.



## “Post-Recording” Dialog For Educational and Training Films

By JAMES A. LARSEN, JR.

In its place, excellent results have been obtained by the following system of post-recording the dialog scenes.

The scene is filmed on the actual location, and a “reference recording” of the dialog is made, using either single-system or double-system sound, as may be most convenient. Since this recording is for reference purposes only, and will not be used in making the final sound prints of the picture, it does not matter whether the sound-quality is good or bad, so long as it is reasonably intelligible.

This means that the microphone can be placed anywhere out of camera-range, and on a fixed stand, thereby eliminating the necessity of a microphone-boom. The acoustics of the location “set” are also immaterial, so the choice of location can be made entirely on the basis of picture possibilities. Since the sound record will be used only for reference purposes, the camera may be used without a blimp, and the director may, if necessary, talk to the actors during the scene.

When a satisfactory picture take of the sequence has been obtained, the picture and sound-track are processed, and suitable work-prints made. In these days of conservation of film, it is probably most economical to have the work-prints of these sequences completely edited, too.

These work-prints (either single or double-system) are then projected on a synchronous projector in a small recording studio such as would be used for recording offstage narration.

The actors group themselves comfortably about one or more microphones, and watch themselves on the screen while they hear the “reference recording” of their own voices played back through ear-phones. They then rehearse their lines in sync with the projected picture and playback.

Generally, after only three or four rehearsals, most actors will be able to match the timing of the picture perfectly with their voices, and a final recording of their dialog can be made. If it is necessary to give an illusion of distance to provide proper sound perspective to match the cuts of the picture, some of the actors can be placed at different distances from the mike, or several microphones may be used.

The final dialog recording can be made at a single, continuous take, or broken down into a number of shorter takes, as may be most convenient. Similarly, the narrator whose voice is used for the narrated portions of the picture can rehearse and record his lines at the same time, or at any other time, as may prove most convenient.

Obviously, this method of post-recording scenes of the nature outlined will give the best possible results with both picture and sound, since the picture component is treated solely for picture values, and the final sound record is made in an

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# A.S.C. on Parade

Salute to Wilfrid M. Cline, A.S.C., now Captain Cline, of the Photographic Division of the U. S. Army Air Forces.

And John Alton, A.S.C., is off on active service as Captain Alton of the Army's mobile studio, the 1st Signal Photographic Laboratory.

Here on the Hollywood front, Paul Vogel, A.S.C., dons Uncle Sam's uniform as Lieutenant Vogel with Major Frank Capra's very special Signal Corps unit.

Congratulations, too, to Byron Haskin, A.S.C., moved "up front" to an executive position out at Warner's. Officially he's Head of Special Effects, with several of the industry's best special-effecters heading semi-independent trick-shot units under him, while Bun acts as a liaison officer between the writers, producers and technicians, seeing to it that maximum use of special-effects is written into every script to aid in cutting wartime production corners. Seems to us Warners have a darn good idea—as well as a good man—there. Wonder why some of the other flicker-factories don't follow suit?

Best wishes to Joe Valentine, A.S.C., and the very new Mrs. Joe who before their recent marriage was Miss Patty Schramm.

Farciot Edouart, A.S.C., re-elected to the Board of Governors of the Academy of Motion Picture Arts and Sciences, representing the Technicians' Branch.

Harry Perry, A.S.C., Hollywood's top travelling salesman — Ooops, sorry! — cameraman, back from a transatlantic round-trip filming convoy backgrounds for Universal's "Corvettes in Action."

And Charlie Boyle, A.S.C., heads East to Technicolor backgrounds and locations for MGM's forthcoming "America."

Speaking of travelling, Fred Jackman, Jr., A.S.C., made a flying trip to the Air Force's Gunnery School at Harlingen, Texas, to scout locations for Pine-Thomas' "Aerial Gunner." Meantime scripter Maxwell Shane worked double time preparing two scripts for the pic—one to be used if they shot on location, the other if they had to work in Hollywood. At latest reports, the pic will be made largely on location "deep in the heart of Texas."

Harry Hallenberger, A.S.C., draws the plum of Technicoloring the live-action sequences for Disney's "Victory Through Air Power."

Arthur Edson, A.S.C., assigned to

Warners' biggie, "Thank Your Lucky Stars," which is expected to feature everyone on the Warner payroll except maybe the gate-man.

Congratulations to Ralph Staub, A.S.C., who recently celebrated his 10th anniversary as producer-director-cinematographer of Columbia's "Screen Snapshots," and incidentally the 22nd ditto for that perennially popular series.

Russell Metty, A.S.C., over at RKO, assigned to shoot "Hitler's Children." We didn't know the Nazi All-Highest had any children—but we know plenty of folks who'd like to shoot their Paw! And we don't mean with a camera!

Out at MGM, Ray June, A.S.C., draws another "Woody" Van Dyke hurry-up epic—"Gentle Annie."

"Little Phil" Tannura, A.S.C., incredibly between pictures on his usually crowded Columbia schedule, dropping in to borrow our pet Craig viewer to catch up on editing some of his personal 16mm. movies.

Leo Tover, A.S.C., assigned to film Paramount's "China." Come to think of it, we wonder how come Hollywood's genuinely Chinese cameraman, Jimmie Howe, A.S.C., never drew an assignment to a Chinese-located flicker—?

Charley Schoenbaum, A.S.C., teaming with "Duke" Green, A.S.C., to Technicolor MGM's tinter, "Salute to the Marines."

A.S.C.-Prexy Fred W. Jackman back from a long week-end spent blitzkrieging the ducks, looking a bit the worse for wear. He won't say whether it was getting up at 4 a.m. to bag those early-rising fowl, or the late nights around the card-table that got him down. But a pleasant time was had by all—except, perhaps, the ducks who forgot to duck when Fred started sharpshooting!

Incidentally, Rudy Maté, A.S.C., ought to have the prize for this month's most diplomatic gesture. We gather there was quite some argument going on between D. O. Selznick and Samuel Goldwyn as to the terms upon which the latter could buy Rudy's contract. But Maté very neatly settled the argument by enlisting in Major Capra's Army Film Unit!

George Barnes, A.S.C., again loaned to RKO by his nominal boss, D. O. S., for "From Here to Victory." If those rumors about Selznick's staying out of production "for duration" are true, maybe George will be on loan-out "from here to Victory!"



Billy Mellor, A.S.C., hates to get his hair cut. But up in Canada on location for "The Commandos Strike At Dawn," they found a way to persuade him. The helmeted gent with the persuasive bayonet isn't a real Nazi, but a much tougher individual—a Canadian Commando playing a Nazi in the picture. H'm . . . after looking in the mirror, guess Ye Ed will scurry to the barber's himself, before anyone tries the same stunt on him!

Tom Tutwiler, A.S.C., grinning like a Texas version of the Cheshire Cat, reports that Warner Bros.—and especially Bun Haskin's trick dept.—is one swell place to work. Here's hoping this new job lasts as long as your previous one, Tom. . . . You were at MGM 15 years, weren't you?

A cheerful letter from Signal Corps Lieutenant Charles W. Herbert, A.S.C., bubbling over the enthusiasm for the worthwhile nature of the job his outfit's doing. From other sources, we gather the Signal Corps could make use of several more men like Herb—but then, who couldn't?

Wonder what's become of our Ol' Swede, Lieutenant Ray Fernstrom, A.S.C.? Haven't heard from him in a dog's age. Well, with his luck at hitting photogenic weather wherever he goes, maybe Ray's on the restricted list as a military secret!

Everyone congratulating Charles G. Clarke, A.S.C., on the smashing success of the October A.S.C. Open Meeting which he Chairmanned.

Wonder what's become of new-bridegroom Eddie Cronjager, A.S.C., who promised to have a pow-wow with us some time ago? Of course, after having met the new Mrs. Eddie, we can understand why he's been muchly occupied of late, even if he is between pictures out at 20th Century-Fox.

Jackson Rose, A.S.C., beaming over the fact that the current fourth edition of his "American Cinematographer's Handbook" is about to go into a second printing, by extremely popular demand.

Walter Lundin, A.S.C., gets the D. of P. assignment filming "Half-pint Kid" out at MGM. Nice going, Walter!



# THROUGH the EDITOR'S FINDER

FOR more than a year, almost every issue of THE AMERICAN CINEMATOGRAPHER has carried on the "A.S.C. On Parade" page at least one item telling that one or more members of the A.S.C. had joined the Nation's Armed Forces. In the course of the last few weeks alone, eight or ten more of the industry's top-ranking directors of photography have either left Hollywood for uniformed service, or announced that they were slated to do so as soon as they completed their current assignments. All told, by the time this appears in print there will probably be more than thirty members of the A.S.C. making pictures for the Government, rather than for the studios. It seems certain that more will follow them.

This brings the industry face to face with a very serious problem. For years we have been accustomed to saying that the industry had more cinematographers than jobs available. But it is also true that the bulk of the industry's major-studio production has been photographed by a comparatively small group of about fifty top-flight directors of photography. There were and are other capable directors of photography who for various reasons have not been counted among the industry's top-flight "regulars." Many of them have acquitted themselves with distinction on assignments to shorts, second units and program features; but because the producers' cry was always for familiar talent with extremely current credits, the charmed circle of the industry's "regulars" has remained much the same year in and year out. When vacancies occurred due to death or retirement, they have very largely been filled by promotions from among the operative crews.

Today, a constantly increasing number of men from both groups are being taken out of the industry to serve the Army, Navy, Air Force and Marine Corps. An even greater stream of invaluable manpower is being drained away from among the operative groups, for these men are younger, fitter, and even more anxious to put their skill at the service of the Nation. It is safe to say that before the year is out, the cream of the industry's talent, both among the "ace" directors of photography, and among the rising young operative cameramen normally best fitted for promotion, will have been skimmed off by the Armed Forces. We will be hard pressed to find enough efficient operative crews, and even harder pressed to find directors of photography capable of shouldering the responsibilities of photographing the industry's major product. *What can be done about this vital problem?*

We'd like to offer a suggestion. As we have already pointed out, there are quite a number of capable directors of photo-

graphy who have done well by occasional minor assignments, but who have not for years had an opportunity to show what they could do with a really important picture. There are others who for various reasons, including age, ill health, or perhaps studio politics, have been in retirement, or at least considered out of the studio picture, even though they may have had distinguished careers in the past.

As we see it, sooner or later many of these men will have to be pressed into service anyhow, to keep the production wheels turning. Why not, then, call them into service *now*—before they are so pressingly needed—while there is yet time to break them in gently, teaching them the 1942 studio ropes while there are still plenty of today's top-flight camera aces to do the coaching? If each major studio would put two or three of these men under contract now, they would have time to stand by and observe the methods of the men whose places they may soon be expected to fill, and to try their hand anew at lesser assignments until they become thoroughly conversant with today's equipment, materials and methods. In that way, when the need came for their services on major assignments, they would be ready, and the studio could place them on such jobs with confidence that their pictures would be competently handled from the start. Isn't it worth a try?

EVERY now and then one of our readers among the studio professionals asks us why we have of late devoted so much space in this magazine to discussions of the professional uses of 16mm. The answer is simple: we believe that 16mm. is very much the coming thing in professional cinematography—even in many phases of studio production. And we want our readers to be ready for it when it comes.

The man who today argues that 16mm. is not worth professional consideration because it is used by many thousands of amateurs is deluding himself. Certainly 16mm. is used by amateurs. But it is also used—and used very professionally—by the thoroughly professional makers of industrial and educational films. It is edging its way into the studio field far more rapidly than many of us would realize. Already it is used for tests and location scouting. It has been used successfully for the production of short-subjects released in 35mm., and even for special sequences of feature productions. It is being seriously experimented with for use even in the most exacting studio work of all—the making of process background plates.

Many of our military photographic services are already operating largely, and in some cases exclusively on a 16mm. basis; others are swinging to it with

increasing rapidity. The work that these groups are doing—the experience they are gaining—the new equipment and methods they are developing for using 16mm. professionally—are literally revolutionizing 16mm. They are forcing its progress at an absolutely incredible rate.

We can't tell what the motion picture industry will be like when this war is over, but the signs are already very plain that it will be something very different from the motion picture industry we have known until now. It is equally plain that 16mm. will be a very vital part of tomorrow's production set-up. Sixteen millimeter in its present state of development could step into the studios right now and replace 35mm. for most purposes. By the time the war is won, and the amazing technical developments in 16mm. equipment and methods which the war is fostering and financing become available for civilian use, 16mm. will almost certainly be absolutely on a par with 35mm., if not indeed actually ahead of it.

Therefore we are trying to give today's technicians, executives and creators an opportunity to familiarize themselves with professional 16mm. now, so they will be fully prepared when the time comes—as it may come far sooner than any of us expect—when 16mm. is tossed into the industry's collective lap with the remark, "Here it is: now make pictures with it!"

WE could not feel that this issue of THE AMERICAN CINEMATOGRAPHER was complete without in some way expressing our appreciation of former editor George Blaisdell who last month came out of comfortable retirement to put his shoulder to the wheel when protracted overwork had taken its toll of your editor's health, and played havoc with this magazine's normal publication schedule. With a constantly increasing number of our most dependable contributors joining the Armed Forces or getting into strenuous defense work, an increasingly heavy load was thrown on the editorial shoulders in keeping this magazine up to the standards we have set for it. Eventually things reached the point where something had to give way—and the editorial health and nerves proved to be the weak spot.

So on last month's issue, friend Blaisdell stepped into the breach and performed miracles in whipping the magazine into shape in an incredibly short time, and under great difficulties. No one could have worked harder or more efficiently than he did, and no one could have been a finer or more considerate fellow-worker. There are times when words seem a most inadequate means of expressing deeply-felt appreciation, and this is one of them; but we want most sincerely to say a heartfelt "Thank you" to George Blaisdell for his help.





Three railroadin' musketeers: left to right, Cinematographer Stensvold, Director Boland, and Cinematographer McCosky, set up with Cine-Special and Bell & Howell 16-Pro atop a box-car.

## "RAILROADIN'!"— IN 16mm. KODACHROME

By ALAN STENSVOLD, S.S.C.

President, Society of 16mm. Cinematographers

**L**EAVING Los Angeles a short while ago, station-wagons, airliners, taxicabs, and motored go-carts were the modes of transportation which launched our production troupe on a nation-wide jaunt to film (in color) the story of American Railroads.

Starting at the beginning, however, I must say that John J. (Jack to his friends) Boland, old-timer in the industry . . . young in action, was assigned by the General Electric Company to produce and direct a picture covering all phases of Railroading, its history, development and modern operation. It must be filmed in color, shot under *actual* and *authentic* conditions—hot or cold, wet or dry, rain or shine—and be completed in sixty days!

Jack received the final okayed shooting script on a Thursday, I was called in on Friday and rounded up our travelling crew and equipment. Our cameras included the Bell & Howell 16mm. Pro camera and an Eastman Cine-Special.

We departed Saturday via a specially equipped station-wagon to make certain running shots and atmosphere scenes en route to Tucson, Arizona. Our travelling

crew included Jack McCosky, S.S.C., associate and operating cameraman, Hugh Wade, assistant (now in England with the Signal Corps), assistant director Ray Nazarro, Boland and myself.

Near Tucson we filmed a cattle round-up and modern methods of loading cattle into stock cars. While waiting for the herds to arrive at the loading corrals, Boland expressed a desire for some nice fleecy white clouds to break up the otherwise clear blue sky. About thirty minutes later the herds began arriving . . . and believe it or not . . . so did the fleecy white clouds. Instead of getting some merely perfect shots we "decorated" those stockyard scenes with the most photogenic sky we had on the entire jaunt.

After a day of shooting action—angle-shots under corral fences, compositions through boxcar-wheels and brake-rigings, and even one set-up framed through the milk faucets of a cow—we wrapped up, rushed to the hotel to clean up in time to catch the 4 p.m. plane for Chicago. It seemed Clarence Bailey, the General Electric man assigned to our picture, had arranged some "can't wait"

shots there for the next day. So off we went "railroadin'" via American Airlines sleeper.

The Chicago scenes were important. We were to cover operations at the clearing "hump" yard just outside Chicago. In railroad language, a "hump" yard is where long lines of freight cars are reshuffled into proper trains for transit to assigned destinations . . . SEE?

On that particular day only, some extra-new types of Diesel-electric switch-engines would be available for filming the "humping" operations. More than 125,000 cars are handled daily at this yard.

An overcast sky greeted us that morning. (Incidentally we rode taxis straight from the airport to the railroad yards.) However, since we were using 16mm. kodachrome, with No. 35mm. temperaments to hinder us, we set up and began shooting anyway. Those engines couldn't wait for weather!

About 11 a.m. the sun broke through for a short period and we kept shooting while the engines kept "humping." Even the 27 correction filters I usually carry couldn't correct for the "blue" of that Chicago atmosphere. Motored go-carts carried us around the yard. Late that day we checked in at the Palmer House. (That's no plug for the place . . . just indicating we travelled first class on this jaunt!)

The next day was sunny but smoky and hazy, so we were compelled to make our shots without sky or great distances to avoid as much of the smoke and haze as possible.

Finishing our scheduled shots sooner than we expected Boland and I went out to find a suitable location from which to shoot a good skyline scene for the opening of the picture. We couldn't find an angle of the Chicago skyline that didn't have electric signs or painted signs advertising soft drinks, hard drinks, soaps of headache remedies displayed so prominently that the shot would have appeared to stress signs rather than skyline. To digress a moment, we tried finding a suitable skyline in every large American city but it wasn't until we reached San Francisco that we found a "clean" skyline, free of signs.

At Sandusky, Ohio, we filmed the operations of giant coal derricks that dump an entire carload of coal into the waiting ships at the rate of one car every 54 seconds. A very interesting operation on the screen, but terrifically dirty to film. It took just as long to clean the coal-dust out of us as it did McCoskey and Wade to clean the cameras after that day of shooting. It was not only coal-dusty, but about 100 degrees in the shade (if any), plus the usual Eastern industrial haze all around the area as well. When the report on the film we had shot, including the Sandusky scenes, reached us a few days later, it read "exposures okay, but very little color in scenes after Tucson, no blue skies, etc." So Boland



wired back "What the H . . . are we supposed to do . . . stop the smoke of industry so we can have blue skies? . . . did you ever see red coal?"

Oh, yes . . . we rode a train from Chicago to Sandusky and from Sandusky to Cleveland. At Cleveland we filmed another gigantic operation . . . unloading ore from the lake boats to waiting gondola cars.

To capture dramatically the complete operation of the unloading cranes, we rigged a mounting to carry one camera, Boland and me on one of the crane arms just slightly above the ore jaws. The camera, a Cine-Special, Boland and I rode our precarious perch into the hold of the ship to film the five-ton "bites" of the jaws, then up, out and over to see the ore dropped into waiting cars. This was another dirty and greasy ride plus hot and hazy atmosphere.

The next day at Buffalo, N. Y., we encountered heavy rains but we made some very unusual action scenes of freight and passenger yard operations despite the wet conditions.

At Harrisburg, Pa., through the cooperation of W. A. Wentz, publicity director of the Pennsylvania Railroad, we filmed modern train maintenance operations which were very exacting as well as interesting and occasionally hazardous. At huge yards like these, minute inspections are given all railroad equipment. One phase is handled by men stationed in pits (air conditioned for their comfort) to inspect the under-side of rolling-stock (another railroadin' term for freight cars, passenger cars, locomotives, etc.)

Filming this operation presented a "cute" lighting problem. We were compelled to light the under-side of the rolling-stock from between the rails to an exposure that would match the exposure of the sky that would be visible in the scene. Thanks to the aid of the railroad's electrical department this was accomplished in short order and we turned in a correctly exposed under-train color scene.

In the world's largest steel plant at Steelton, just east of Harrisburg, we filmed the making of steel rails and car wheels. We followed this process from the ore-piles outside the plant, into the huge furnaces, following the molten steel down sand troughs into vats, then poured into forms from which it was fed through rollers and shapers until it finally came out the other end of the plant as finished rails and wheels.

Throughout Pennsylvania and the eastern states we filmed more atmosphere shots, fishing, camping, boating on the lakes, in other words, we had a grand time for a few days.

Washington, D.C., gave us some of our most valuable shots, what with so many famous trains coming and going from that great capital city. Boland lined up one of the most spectacular railroading shots in history there. He staggered the noses of all the famous locomotives drawing trains into that city across as many tracks. The still-man from one of the railroads became so excited about the

hot that in trying to shoot a flock of publicity stills he double-exposed every shot he made . . . we learned a few days later. A cool, calm and collected crew like us from Hollywood weren't bothered at all. Of course, our "one-way" camera motors might be entitled to some of the credit for our success!

New York City and vicinity offered us some more unpleasant weather. Early one morning we had to go up the Hudson several miles to find a good spot for an action-shot of the famous Twentieth Century Limited. We weren't far from Ossining (Sing Sing to you) when we found the ideal location.

The cameras were set up, downwind from a picturesque curve, four tracks wide. Our guide from the railroad company wasn't sure on which track the Century would travel that morning. The sky was flecked with slow-moving clouds. The train was due about 7:00 a.m. . . . the blue morning atmosphere was just right for color to be its worst. The cameras were set up at the most logical spot, filters, lenses, exposures set, and the "Century" whistled for the curve.

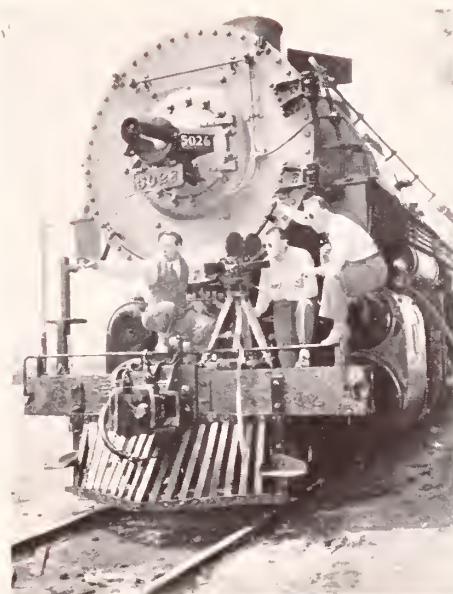
Boland shouted "Roll 'em!" As the "Century" came around the curve at its reputed 100 per, a cloud started across the sun. When the "Century" passed out of our picture the cloud passed off the sun. Since we didn't have an Act of Congress in our pocket, we couldn't call the train back. So that shot had to be it! We were scheduled elsewhere the next morning, so there could be no retakes. To ease our tempers, someone piped up, "Well, we shot it under *actual conditions*, didn't we?" I'm still surprised some of us didn't remain there at Sing Sing—for more or less justifiable homicide.

Boland took us to see the Dodgers beat the Giants that night. After the game he and I caught a plane for Cincinnati to be on hand for another early morning shot. The rest of the crew took it easy on a Pullman.

Seven-thirty the next morning Jack and I rolled off a swell shot of the "Ponce de Leon," the South's crack streamliner. It had beautiful composition, farm buildings, trees, etc., a thing for which Boland is a stickler. A nice fellow named Callahan, publicity director for the railroad, had driven us out to the location, about thirty miles south of Cincinnati. Cruising back to the city Boland mentioned it was a shame we weren't closer to town else we might have made a shot of the "James Whitcomb Riley," another famous eastern streamliner, that morning instead of waiting to get it the next day. It was due to leave the Cincinnati station at 8:00 a.m., bound for Chicago. Callahan said, "If you're game — we can make it!" Boland agreed.

To make a long story short, we crossed the overhead bridge near the station just as the "J. W. Riley" was pulling out. Our driver said he could beat it to a spot west of town where we could get a nice running-shot of it. En route, Boland spied a church-steeple which would make good background composition for the

(Continued on Page 491)



Top: the pilot-beam of a big Union Pacific locomotive makes a sturdy—if cramped—platform for filming running shots. Middle: a hand-held camera is useful for tricky angle-shots—if there's someone to hold the cameraman! Bottom: "riding the blinds" on a streamlined baggage-car to get a "Railroadin'" running-shot.



# "STROBO-SYNCING" YOUR MOVIES WITH 78-RPM PHONOGRAPH DISCS

By D. LISLE CONWAY

President, Syracuse Movie Makers' Association

TWO months ago I described for readers of THE AMERICAN CINEMATOPHONER the system I use for stroboscopically synchronizing home movies with sound-on-disc, using home-recorded 33 $\frac{1}{3}$ rpm acetate discs to carry music, narration and even synchronized dialog. Quite a few of my friends in the Syracuse Movie Makers' Association, not to mention total strangers elsewhere who read the article, were kind enough to tell me they thought it was a good idea, and that they were going to build themselves strobo-sync outfits similar to mine.

Then—at least as far as my friends in Syracuse were concerned—came an embarrassing (for me!) discovery. My own outfit, you see, was built up several years ago, before wartime shortages and priorities entered the picture. But when my friends started to build their outfits, they quickly discovered that, at least in our part of the country, there just aren't any more half-speed turntables to be had! There are plenty that work at the standard commercial phonograph speed of 78 rpm., but (unless you are lucky enough to buy one second hand) none that operate at 33 $\frac{1}{3}$  rpm.

I imagine the situation is much the same in many other regions. So here is the method we worked out to permit synchronizing 78-rpm records with home

movies by the same stroboscopic synchronizing principle. It was tested at a recent meeting of the Syracuse Movie Makers' Association, and worked very successfully.

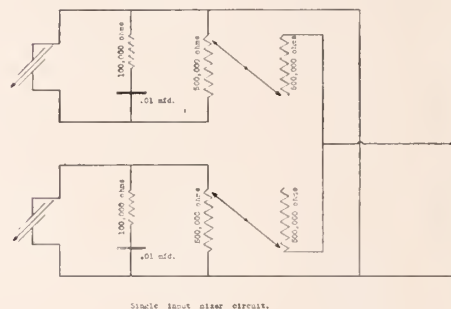
If possible, obtain two standard phonograph motors and turntables. These motors may or may not be of the 60-cycle synchronous type, but if they are the difficulty of matching their speeds will be eliminated. However, if only one turntable is to be used, planned silent periods during the showing of the film will be necessary as recordings are changed. Therefore, the use of dual playback turntables is highly recommended as a smooth transition from one table to the next can be made with no break in the continuity of either the sound or the picture.

The motor should have sufficient power or torque so that the recording can be held motionless as the turntable revolves underneath it. This will enable a fast, clean, start, with the record coming up to speed within a half revolution of the table, so that change-overs from one table to the next can be made without losing a beat of music. This is done every day in radio stations throughout the country when recorded symphonies are played in part or entirety without interruption on the air.

Mount the turntables on a board or

cabinet of sufficient length so that two twelve-inch recordings can be played at the same time without interference. The pickups should be mounted in the same way. Here it might be stated that most of the pickups marketed today for playing commercial records have a stylus or needle pressure which is far too heavy for playing acetate recordings. Therefore each pickup should be counter-balanced or adjusted so that the stylus pressure or weight of the head at turntable level should not exceed two or two and a half ounces.

The ideal weight is one ounce or slightly over, but this weight will depend upon the mechanical impedance of the stylus; in other words, adjust the counterbalancing weight or spring adjustment of the pickup until it reaches the point where the stylus will just track the record groove with a full frequency response and no distortion can be noticed. This point will vary with different makes and types of pickups.



A mechanical "one input" mixing circuit is illustrated by which it is possible to carry music on one turntable and sound-effects on the other, fading either one up or down without affecting the level or volume of the other. This is extremely useful in adding sound to silent films and also can be used in re-recording sound from commercial records to the recording being made to sync with the film.

The rest of the reproduction equipment may be the same as outlined in the previous article.

In recording by this method, if a pair of dual recorders can be used, the recording of a full-length production can be run off all in one take; the recordist changing over from one recorder to the other at a given signal or at the end of each disc by merely flipping a switch. The point on the film where each change-over of recorders is made should be carefully noted for later reference.

Also, a careful check should be made to ascertain that both recorders are up to and running at the same speed of 78.26 rpm; otherwise a change of pitch in sound and projection-speed will be noted.

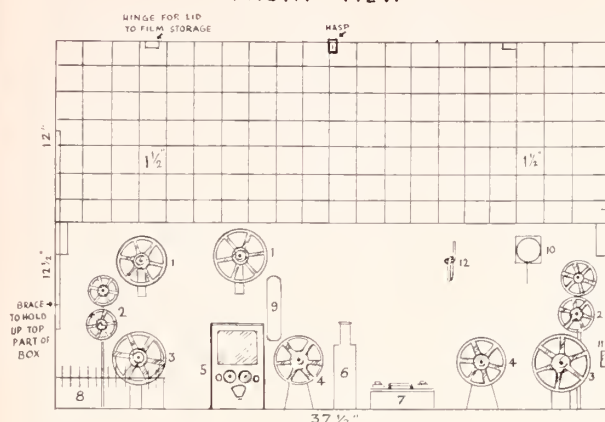
If the playback tables do not have synchronous motors, then a check on these should be made in like fashion. This can be done with either two of the regular commercial 78.26 rpm strobes supplied with the motors, or by counting the number of revolutions per minute

(Continued on Page 496)

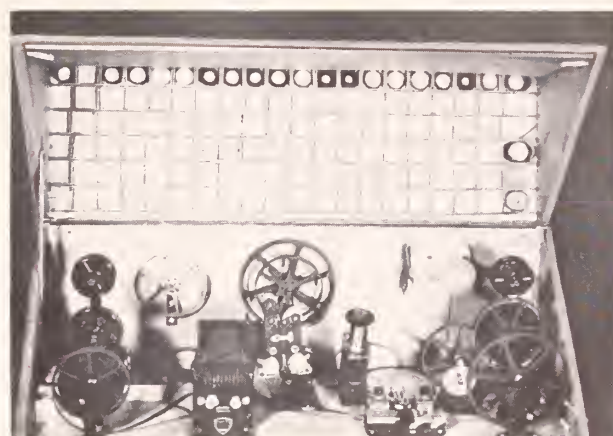
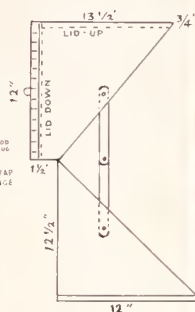




FRONT VIEW



SIDE VIEW



## Editing Is Easier With This Home-Made Film Editing Case

By EARL ANTRIM

I'VE always enjoyed editing movie film. To me, it's a joy to see the short scenes grow together to make a smooth-flowing movie story. But the haphazard way most of us go about the job of editing always left me feeling so worn out and dissatisfied that it took most of the joy out of it.

Editing film properly is really a systematic process. But there's nothing systematic about the way most of us leave snippets of film scattered all over a table-top where they're likely to become lost and dirty, especially if we're interrupted—as we always are—right in the middle of the job.

The trouble is that you can't go into your pet camera store and buy a gadget that will enable you to keep your film-editing orderly. You can buy rewinds, splicers and viewers, of course, and even boards with little numbered cups or pegs to hold the scenes while you assemble them. But there's nothing that will hold your whole editing outfit—film and all—as a unit, and let you shut the whole thing up, dust-free, the way you can put your camera or projector safely away in its case when you aren't using it.

Personally, I'm a nut for movie gadgets, and I've looked long and hard for an editing gadget like this. I've haunted the camera-stores, and read all the ads and "build-it-yourself" articles in all the movie magazines I could get hold of, but never found anything to quite suit me. Talking the matter over with my movie-making friends, and studying their equipment brought almost the same result; some of them had built gadgets that had some of the features I wanted, but none of them seemed to have all of the features I wanted.

So I decided I'd have to build my own.

I'm neither a mechanic or a carpenter: in fact, I really don't like to do this kind

of work. But once I had the basic idea sketched out, I found the job of making the editing case surprisingly easy. The thing is so simple that I'm sure anyone who can make a saw and a hammer come reasonably near doing what he wants them to do can make one without trouble.

Making mine required only a few hours' work and \$2.75 worth of material. Of course, this is just the material for the case: what goes into the box for extra convenience — rewinds, viewer, splicer, extra "dummy" rewinds, etc.—depends altogether upon how much of this equipment you've already got, and how much you want to spend buying new accessories. A very nicely equipped editing case can be had for ten or twelve dollars. Mine, which I filled with all the film-handling gadgets I thought I could possibly need, was completely equipped for less than \$60.

Here's the bill of materials required:

1 pair of small strap hinges.

1 pair of small offset hinges.

1 small hasp and lock.

1 handle.

1 dime-store electric light socket.

1 electric outlet box for 2 or 3 plug-ins.

A few feet of insulated 2-wire cable.

A small quantity of 1/4" stove-bolts, 1/2" and 1" long.

A small quantity of nails, wood-screws and brads.

2 wooden dowel-pegs to hold lid of film-storage compartment open and shut.

1 wooden panel, 1x12x105" from which to cut top, bottom and sides.

Plywood, 14 1/4 x 37 1/2" for front.

Plywood, 12 1/2 x 37 1/2" for back.

Plywood, 1 1/2 x 37 1/2" for back extension.

Plywood, 11 1/2 x 36" for film-storage lid inside main lid.

1 or 2 iron braces to hold upper part of box when open.

5 strips of wood or plywood, 1 1/2 x 1 x 36" for film-storage compartment.

104 strips of wood or plywood, 1 x 1 1/2" for separators for film-storage compartment.

1 piece of wood, 2x6x8", grooved to hold 8mm. or 16mm. reels.

Light oak stain or varnish for outside.

White paint or enamel for inside (if you wish).

I think the sketches and the photograph show how the case is made, so there's no use boring you with a long description. When closed, the case is 12 1/2" wide by 15" high by 37 1/2" long. The hinges on which it opens are placed at the back, just a little below the upper rear corner.

When the case is opened, the rear side of the upper section, which is fitted with little square pigeon-holes 1 1/2" square by about 1" deep, forms the film-storage compartment. There's a plywood inner lid hinged to swing up and out of the way when you're editing film, which drops down in front of the storage compartment so that it holds the film in place when you have the case closed. Two little wooden dowel-pegs fit into holes in the upper end-panels to hold this lid in either position, and an iron brace holds the top of the case up when in the open position.

You can fit up the bottom of the case any way you like, and fit in any combination of rewinds, viewers, etc., you find convenient. In mine, you'll notice I've used two sets of rewinds and a pair of Eastman editing brackets, with one Craig action-viewer and one non-moving viewer. I've also found a Bell & Howell film cleaner very useful.

Even if you don't care for such elaborate accessories, I can strongly recommend providing several spindles on the back of the box (lower part, of course) for holding reels with which you're working, and a grooved block to hold a number of small laboratory projection-spools. The socket for an electric light is obviously necessary (it's even better if you can shade it so the glare won't be in your eyes), as is the provision for plugging in your viewers, etc.

If you want to do things the simplest

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# It's Easy To Prepare A Script For Your Movies

By W. G. CAMPBELL BOSCO

FROM the technical viewpoint there's nothing wrong with amateur movies. You can go to almost any cine-club meeting anywhere and see plenty of pictures which, so far as photography is concerned, would win commendation from any professional. Between observing the work of the professionals in their theatres and zealous study of tips gleaned from the better photographic magazines the average cineamateur has picked up enough of the theory and practice of cinematography to make his pictures well worth seeing.

But there's one thing that too few amateurs seem to have learned. That is how to prepare and use a script, or, if you prefer it, a continuity or scenario. Some of them seem to feel there's something mysterious about the word "script"; others have the impression a script is something that is useful only in making a scenario picture or photoplay. Others just naturally shy away from anything that sounds like "script."

The fact of the matter is that *any* picture will be better for the use of a script, even the simplest sort of cine-snapshots or vacation film. For example, the other day one of my friends showed me a reel of particularly interesting vacation pictures. After the showing was over, I couldn't help asking him why he didn't put a few more scenes in here and there throughout the reel to tie him and his family into the scenic shots.

His reply was that he simply didn't think of it at the time—and when he did, it was too late, for the vacation was over, the film processed, and he was in the midst of editing it.

A script would have helped him. After all, a script is a blueprint, a plan. It takes into consideration all the elements of the story, and plans the best way of shooting them for presentation on the screen. It anticipates, or should try to anticipate, every situation and prepare for every circumstance.

It has the advantage of being planned objectively when the cameraman is not primarily concerned with purely camera matters. And, to those who haven't tried it yet, there's as much fun in scripting, or if you prefer, planning a picture as there is in filming it. Try it next time you make a picture!

No matter what the subject, your movie will be the better for having been prepared in advance. And lest there are some who might feel that they might lose by being bound to an ironclad script, yet then remember that hardly

any picture follows its script religiously. As the story develops, so does the script. Opportunities present themselves and improvisations are made.

"But", says the man who is an inveterate travelogue or vacation movie-maker, "I don't need a script. I shoot the scenery and points of interest and things like that. Why, I couldn't make a plan or write a script for my pictures, even if I wanted to, because I don't know what I'm going to film till I get there."

Well, he's wrong. Perhaps he doesn't need a script in the same way and for the same purpose that the maker of a 'story' film needs one. But his pictures would be the better for having a continuity that had been thought out, as far as possible, beforehand.

The proof, if proof is needed, is in those travel and vacation movies that we have all seen, which are made more interesting by the thread of continuity that runs through them, and by the little human touches that brighten.

But for the sake of harmony, let us agree with this man and say that he doesn't need a script. Let us say that all he needs is some notes. And let the notes be written from his own experience. They would naturally include things to do that have been found successful before in similar movies, and things he wished he'd done, but hadn't thought of in time.

Such notes would be full of "reminders." "Reminders" to get plenty of close-ups. "Reminders" to prevent one from getting home, sitting down to edit the film, and saying, "Darn! I forgot to get that shot."

If such a man would start making just such notes he'd be writing a script, adequate for the needs of his picture, before he knew it.

Because the majority of amateur movies concern themselves with the filming of activities that are more or less extemporaneous, let us consider the scripting of just such an event. Of course, every film, every event, every excursion is different and presents its own problems. But certain fundamental rules can be applied, with variations limited only by the imagination of the producer.

The following treatment is not an attempt to be brilliant or even original. It merely attempts to show, by illustration, what can be done in the way of adding interest and continuity to what might be just another reel of film.

The subject is a picnic. The characters are the movie-maker's family. There have been other picnics, and other movies have been made of them. This one is going to be different. The other movies of picnics have almost always begun at the picnic and have been of little interest to any one except those who were there. This time we let the audience in on the planning of the picnic and take them along from the beginning.

Actually we don't know what is going to happen at the picnic. Some of it we can imagine. Some we can plan and stage. But we *do* know what's going to happen before the picnic and after it because we are going to make it happen . . . for the benefit of the camera.

We decide, let us say, on the following idea for an introduction. It is Sunday morning. Mother and father and the two children are sitting in the garden (or the living room). Father is deep in the paper, mother is sewing.

One of the children suggests a picnic, the other supports the idea vigorously. Father says no. The family asks why. He says that there is no gas. All right, they say, let's walk. So, with a last longing look at his comfortable chair and unread paper, father capitulates.

Such a story can be told in the following scenes or takes:

*Scene 1:* Close-up of porch floor. A folded newspaper with the word "Sunday" in view drops into the picture. An arm clothed in dressing gown reaches into the picture and takes the paper.

*Scene 2:* Medium-shot. The owner of the arm in the above picture walks in with his paper and stretches luxuriously before sitting down in a comfortable chair.

*Scene 3:* Medium long-shot (another angle). Shows father reading, mother sewing and the little girl playing with her doll.

*Scene 4:* Medium close-up. A door. It bursts open and little boy enters. He runs through.

*Scene 5:* Medium long-shot (as in Scene 3). Little boy rushes up to mother.

*Scene 6:* Close-up, little boy and mother. He says "Let's have a picnic".

*Scene 7:* Medium-shot, little girl. She looks up from her doll, then gets up excitedly.

*Scene 8:* Medium-shot, mother and both children. Very animatedly they are both asking her if they can go on a picnic.

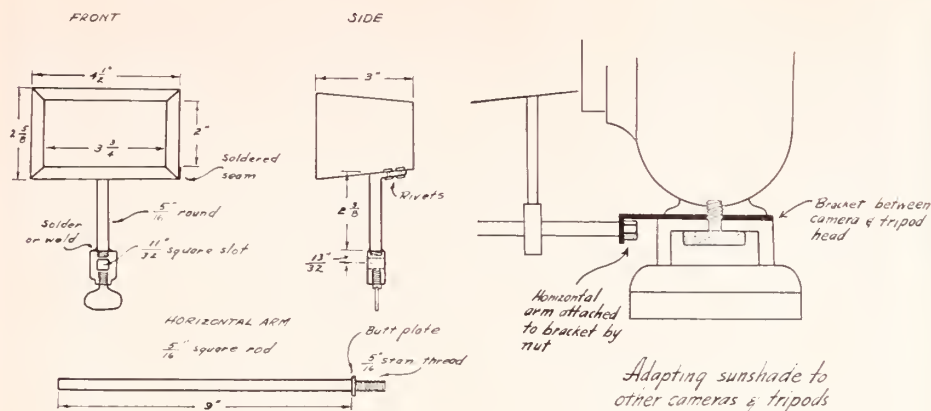
*Scene 9:* Close-up of father. He glances apprehensively out of the corner of his eye in the direction of his family, then settles more resolutely into his chair and behind his paper.

*Scene 10:* Medium-shot, mother and children. Mother pulls them close to her and tells them: "Go and ask your father." Exit children.

*Scene 11:* Medium-shot, father still blissfully reading. The children enter. One of them pulls at the leg of his

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# A Professional Sunshade for the Eastman Special

By **CARL MURRAY**

Supervisor of Photography  
Motion Picture Division  
American Telephone and Telegraph Co.

FOR a long time I've been in hearty agreement with the various writers in *THE AMERICAN CINEMATOGRAPHER* who have indicated that they thought the usual "lens shades" supplied with 16mm. lenses were of little account. For the not too critical novice amateur, they're certainly better than none at all; but for the 16mm. professional or the advanced amateur, they're decidedly inadequate. Compared to the sunshades used professionally on 35mm. equipment, the protection they offer from extraneous light is negligible. Particularly have I felt that a really protective sunshade might have a definite bearing on Kodachrome quality.

As I was unable to find anything of this type commercially marketed, I designed and had made a professionally satisfactory sunshade for my personal camera, an Eastman Cine-Kodak Special. The photographs and diagrams reproduced herewith are, I believe, largely self-explanatory, but I might enlarge on one or two points.

The horizontal supporting arm is simply threaded to enter the front or vertical tilt-handle socket of the Eastman Cine-Special tripod.

The sunshade itself has not been constructed to particularly exacting specifications, but it has ample clearance for the Eastman 15mm., 1-inch, 2-inch, 2 1/2-inch and 3-inch lenses, with any combination on the turret. It will be noticed that the sunshade has been designed with sufficient width so that *both* of the lenses on the Cine-Special's two-lens turret fit inside the rear opening of the sunshade, making it unnecessary to remove one lens from the turret to accommodate the sunshade, as might be necessary with a

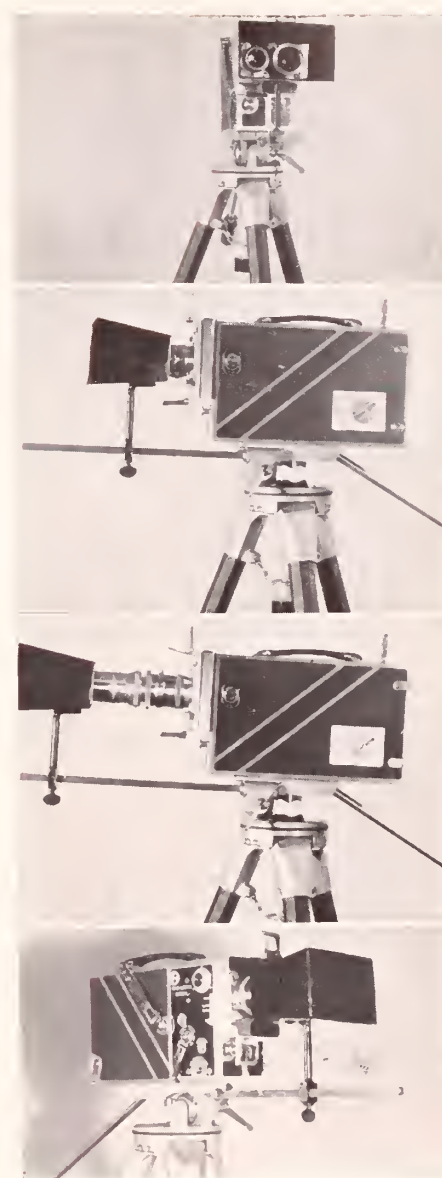
lens-shade of smaller dimensions. The dimensions given on the diagram are correct as far as they go. However, the final assembly must be more or less of a cut-and-try proposition; otherwise interference may occur with the finder, lenses or special accessories.

The sunshade itself is made of 20-gauge galvanized iron, and the rest of cold-rolled steel. The shade is lined with black felt, glued in place with waterproof glue. The sunshade with its supporting rod and sliding collar are strong enough so they can be used as a wrench to draw the horizontal arm against the butt collar, and thus level the arm.

The device is convenient to use, involving only sliding the shade out toward the end of the arm when adjusting or changing lenses, but even so, I would not bother with it were I not convinced that it brings a readily discerned improvement in color and definition, particularly, as might be expected, when shooting near a strong light-source, or in highly reflective surroundings.

Although only a crude adaptation of professional 35mm. sunshades, it seems to do the job, even though it could be refined in various ways. Among these refinements might be mentioned the adaptation shown in the sketch for using the device with other types of cameras and tripods.

Another refinement, which would be decidedly necessary when using a camera like the Filmo, with a finder at the side, or a Cine-Special with an auxiliary finder mounted in this position, would be to pierce the left-hand side of the sunshade with louvers. This would permit keeping the side-mounted finder in the normal position, close to the lens.



The louvers, presenting themselves edge-on to the finder, would not interfere with the finder appreciably, yet would continue to give satisfactory sunshade protection to the lens.

Another refinement which would probably further improve the results obtained with the sunshade, would be to fit small baffle-plates inside the sunshade, as is done on many professional sunshades.

Still another refinement, which would be of greatest value to those doing most of their filming in black-and-white, and outdoors, would be to provide a slot in the left side of the sunshade, just in front of the rear opening, into which the standard 2-inch square glass filters could be slipped, either directly, or in a convenient metal carrier. This would simplify the 16mm. professional's filtering problems, as a single set of standard 2-inch glass filters could be used with all lenses, instead of a much larger assortment of duplicate filters individually mounted to fit each of the user's various lenses.

It is a pleasure to pass this design on to the readers of *THE AMERICAN*

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# Scenario For Filming

## A WARTIME THANKSGIVING

By J. DICKINSON REED

THE movie formula that has served us all so well for many peace-time Thanksgiving movies doesn't fit very well this year. Too many of the former ingredients have been ruled out "for duration." Too many things we used to take for granted as part of the Thanksgiving festivities can no longer be done. Besides, I think all of us are approaching this Thanksgiving with an entirely different spirit: in these war-time days most of us have much more to be thankful for than merely a tableful of roast turkey.

Movies made this Thanksgiving—and of course we want to make them—ought to reflect these changes. They ought to show something of the limitations which have made such changes in our Thanksgiving plans. And they ought to express something of the more serious spirit of this year's holiday.

Here's a scenario for a Thanksgiving home movie which attempts to do that. You can amplify or modify it to suit your individual needs.

*Main Title:* "Thanksgiving—1942."

*Scene 1:* FADE IN. Full-screen insert of page of a large calendar which shows the month and year prominently, and of course the Thanksgiving-day date.

*Scene 2:* Full-screen close-up of calendar-date of the Sunday before Thanksgiving.

*Scene 3:* Long-shot of the family, seated around dinner-table, just at the end of their usual Sunday dinner. Mother leans forward and speaks.

*Scene 4:* Medium close-up of Mother, speaking.

*Title:* "What shall we do this Thanksgiving?"

*Scene 4-a:* Same as Scene 4. Mother finishes speaking, and looks around at family.

*Scene 5:* Medium close-up of Dad. He holds out gas rationing book and speaks, shaking his head.

*Title:* "Can't drive out to Grandma's—no gas!"

*Scene 5-a:* Same as Scene 5. Father finishes speaking, and looks glum.

*Scene 6:* Medium close-up of young son Dick. He speaks.

*Title:* "Can't go to the football game. My shift at the plant has to work Thursday afternoon."

*Scene 6-a:* Same as Scene 6. Dick finishes speaking.

*Scene 7:* Two-shot of two smallest children. Both start to speak, stop, look at each other, and finally the youngest girl speaks.

*Title:* "Sugar ration's about gone—not even any hard-sauce for the plum pudding!"

*Scene 7-a:* Same as Scene 7. She finishes speaking, and her young brother, Tom, suddenly realizing the calamity, bursts out:

*Title:* "Gee, what have we got to be thankful for?"

*Scene 7-b:* Same as Scene 7-a. Tom finishes speaking and looks exaggeratedly glum.

*Scene 8:* Medium-shot of Mother. She looks around in surprise. She reaches out and picks up the newspaper from where one of the family has dropped it, and points silently to a big headline.

*Scene 9:* Insert: close-up of headline: NAZIS WIPE OUT TOWN. (This can be made by carefully pasting this headline, which most papers carried not long ago, across the front page of a current edition with the proper date.)

*Scene 10:* Medium close-up, panning slowly around the table, as the various members of the family show realization of what Mother means.

*Scene 11:* Insert: close-up of telephone.

*Scene 12:* Long-shot. Father hears the phone ringing, gets up and goes to answer it.

*Scene 13:* Medium-shot. Father, talking on phone. He suddenly begins to smile, nods agreement, hangs up phone and starts toward camera.

*Scene 14:* Long-shot of Father, re-entering dining-room. He speaks.

*Title:* "That was Cousin Don. Grandma's coming in to visit them, and they'll all come here on the street-car Thursday!"

*Scene 15:* Long-shot (reverse angle) of family at table as they react to news.

*Scene 16:* Medium close-up of Father, speaking.

*Title:* "Mama and Cousin Mary will team up on the dinner. And—they've plenty of sugar!"

*Scene 16-a:* Same as Scene 16. Father finishes speaking.

*Scene 17:* Two-shot of two youngest children as they react happily to this, obviously with thoughts of plum pudding and hard-sauce in mind. FADE OUT.

*Scene 18:* FADE IN. Insert: close-up of Thanksgiving date on calendar.

*Scene 19:* Long-shot in dining-room. The younger children are busy getting the table set for the Thanksgiving meal. If practical, it would be effective to show in background Mother scurrying around in the kitchen.

*Scene 20:* Insert: close-up of doorbell ringing, or hand pushing bell-button, as may be convenient.

*Scene 20-a:* Same as Scene 20. Children rush to answer doorbell.

*Sequence A:* (ad lib) Shots of the other relatives arriving, being greeted by family, etc. End with FADE OUT.

*Scene 21:* FADE IN. Long-shot of table, everyone settling into place, as Mother brings in the turkey. She places it before Father, and sits down in her own place.

*Scene 22:* Close-up of Mother, as she looks happily around table.

*Scene 23:* Medium close shot, panning slowly around table.

*Scene 22-a:* Same as Scene 22. Mother finishes surveying the family, and looking happy, but a bit regretful, speaks.

*Title:* "Everything would be perfect, if only Bill were here—"

*Scene 22-b:* Same as Scene 22. Mother finishes speaking, and looks out of the scene.

*Scene 24:* Insert: Close-up of Service Flag in window, shot from inside house, and back-lighted if possible.

*Scene 25:* Insert: close-up of photo of eldest son, in civilian clothes.

*Scene 26:* Insert: close-up of hand pressing doorbell button.

*Scene 27:* Long-shot. Everybody looks up. Person sitting nearest door goes to answer the doorbell.

*Scene 28:* Medium long-shot in door of dining-room. Very suddenly, into view comes Bill, in military uniform, unexpectedly home on leave.

*Sequence B:* (ad lib) Close shots of family as they swarm to greet Bill.

*Scene 29:* Long-shot of family, again at the table, beaming, with Bill in the place of honor.

*Scene 30:* Close-up of Mother. She speaks. *Title:* "With Freedom, plenty, and our loved ones, we've more than ever to be thankful for this year!"

*Scene 30-a:* Same as Scene 30. Mother finishes speaking.

*Scene 31:* Medium long-shot of the group at the table (slow pan, if necessary) nodding agreement. FADE OUT.

*Title:* The End.



# Off-The-Beaten-Path Moviemaker

By GEORGE BLAISDELL

**H**ARRY E. PARKER, member of the Los Angeles Cinema Club, entertained a party of friends at his comfortable home in Los Angeles early this month. He showed nearly eight hundred feet of 16mm. Kodachrome film. He really entertained them, too. The pictures had been exposed in the Yosemite country, in the high Yosemite country, to be precise—not alone in the spots made so familiar to the world at large through visitations of camera-addicts both small and great. Included in the searching out by the camera was territory away from the haunts of the beaten-pathers, where the scenery carried a sweep—and a thrill—that are out of the usual.

Harry Parker is something of a traveler, and has been all his life. Speaking of the Yosemite, he should rate as a veteran visitor in that great region. The recent trip started him on the way toward the second score of times he has absorbed the beauties of the Yosemite.

Yet he is qualified to estimate the Yosemite as a contender for world honors strictly on its merits. Of the world's glories he has seen with his own eyes what is presented to one man in four trips around the world. To that may be added three extended journeys about South America, also to the Mediterranean, to the Caribbean, to Mexico, to Alaska and to Hudson's Bay.

The guests at the showing, like all close friends of the cinemateur, have been close followers of the ups and downs of his camera from the very first. So they could all speak with knowledge of the circumstances when they declared the pictures they were following represented Mr. Parker's best work photographically.

The photographer modestly declined to accept any unusual credit for his work. He insisted he had had the benefit of the counsel and guidance of Guy D. Haselton, well known and veteran camera artist, his companion of several weeks.

Many of those who have not personally visited Yosemite may have a misconception of the layout of the land. The valley floor, where are situated the more familiar business places and the residences, is only a mile wide and a few miles long. But Yosemite National Park itself comprises 1189 square miles.

The surrounding territory, the high country, has been divided into day's stints for horseback riders, into distances that will make a comfortable ride and enable tourists to arrive sufficiently early to allow man and beast—and of course women if they are along—to get abundant rest.

The journeys are set for six days, with comfortable camps at the end of each day—with meals and sleeping accommoda-

tions. Outdoor fires are extinguished at 9:30 at night, which means at 10,000 feet altitude, as it often is, there is a real tang in the air. Those who sometimes overestimate their resistance to cold weather are quite certain to feel the sting of Jack Frost.

Mr. Parker's trip, of course, was a pack trip, a mule pack trip, wherein the mule did a certain amount of what to some animals is trotting. The ground, of course, was none too even. Neither was the gait of the animal. On the contrary, it bounced. And right away it bounced again. The net results of the animal's efforts were one camera, damages to the extent of \$6.50; one tripod damaged, and one Weston meter decidedly in need of a successor. Advice was extended that it would be wise to retain possession of the damaged meter, and the meter was accordingly placed in the household archives.

"Among the places visited on the trip were Merced Lake, 7100 feet," said Mr. Parker. "The party stopped there a second day. The trip was continued through Washburn Lake, where the limit was taken in trout. We arrived the next day at noon at Vogelsang Camp, 10,000 feet elevation. On account of the great amount of snow on the trail we went over the Fletcher Creek route.

"On the following afternoon we went by way of Rafferty's Creek to Tuolumne Meadows, 8600 feet elevation. At noon the next day we reached Glen Aulin, 7800 feet, and from there went to Waterwheel Falls.

"This was the most rocky and rugged country I have ever experienced. Due to the heavy snows and rains the falls were at their best. We went back to Glen Aulin, right alongside thunderous waterfalls. It was cold and we slept with everything we possessed, but the consciousness of that great roar from the Cascade Falls seemed to remain. The next day after we moved along we could feel the silence.

"We followed the McGee Lake trail to May Lake, 9270 feet, at the foot of Mount Hoffman. Here we proved to be the first group in for the season. We found here snow three or four feet in depth. In early July at these altitudes it is light until 10 o'clock.

"Working in those high altitudes, exposure is a most important point for the photographer to watch. Due to the thinner air of these higher altitudes, light values are entirely different from those most of us meet in our usual, stay-at-home filming.

"Not only is the direct sunlight considerably more intense than at lower altitudes, but because the thinner air does not diffuse and reflect the light as it does at lower altitudes, there is much less



light in the shadows than we are accustomed to.

"Shooting Kodachrome at 5000 to 10,000 foot altitudes, under weather conditions which at home we would expect to give us an  $f:6.3$  or  $f:8$  exposure, it is not at all unusual to find scenes in direct sunlight which call for an exposure of  $f:11$ . At the same time, exposure values in the shade of a single tree—not too leafy—may require an aperture from  $f:4.5$  to  $f:2.5$ . If you are in heavy shade, as when shooting under a grove of well-foliaged trees, an opening of  $f:1.8$  may be none too much.

"The best rule to follow is to use your meter carefully and *selectively*. Determine whether the parts of the scene in which you are most interested lie in the sunlight or in the shadow, and then take your meter-reading and expose for that particular area. The rest of the picture will have to take care of itself.

"If you expose for the sunlit areas, the shadows will be largely lost. If you expose for the shadows, the sunlit parts will be badly overexposed. This does not always make for the most perfect photographic quality, but it is the most consistently successful method to follow under these high-altitude conditions.

"The real secret of success in working at these high levels is to plan one's com-

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# AMONG THE MOVIE CLUBS

## FILM WANTED!!

The Syracuse (N. Y.) Movie Makers Association needs films, urgently. According to President D. Lisle Conway, the Club "Has the honor of supplying film programs for the recently-erected Army Air Base near Syracuse. Consequently the Club's facilities for supplying program material are being taxed to the utmost, but even with the help of several other Clubs with which the Syracuse group has exchanged films, the supply of film is far from enough for planning regular programs that will be of any value from an entertainment standpoint."

The patriotic Syracusians are therefore asking us to broadcast an urgent S.O.S. to other clubs and individual amateurs throughout the nation, asking for information as to films which could be made available for showing to these Army men. President Conway continues, "These men are from all parts of the country, and therefore any films which could be obtained from all parts of country could be used; providing, of course, that they are not what is commonly known as the 'personal' type. Films of travel, scenarios, local newsreels, etc., will be acceptable. These films will be run on good projectors and only by thoroughly responsible members of the Club, and will be given the best of treatment."

Therefore we urge every reader of THE AMERICAN CINEMATOGRAPHER who has such films to list them with President Conway of the Syracuse Club. The listing should include the following information as to each film: Title of film; Producer and producer's address; whether black-and-white or color; sound or silent, and if sound, whether sound-on-film or sound-on-disc (the Club has facilities

for either type); 8mm., 16mm. or 35mm.; type of picture—travelogue, scenario, educational, newsreel, or other; locale of pictures taken, and any incidents pertaining to them if possible; footage, dates available; and whether these pictures were produced by amateurs or professionals. .

Conway concludes "I know this is a big order, and probably will not be filled in a hurry. However, we want to assemble as much information as possible and are willing to make this information public for the benefit of other clubs with similar problems. In short, we are willing to act as a clearing-house in this matter for other clubs."

"The important thing from our standpoint at the immediate moment is that we assemble as big a list of films available so that we can quickly prove to the Army authorities that we amateurs can adequately supply them with good films and programs from all over the nation at regular intervals. This is being done as a public service on our part with no remuneration to us, and therefore we are not in a position to rent films for the Army. Also, due to our limited budget, we are in a position to pay the postal charges only one way—namely, back to where the films came from. Under these circumstances, I hope that other clubs and individuals will have enough of the old spirit to cooperate with us and enable us to entertain the boys from their locality with films. How about it?"

All communications regarding this extremely worthwhile project should be addressed to the Club's President, D. Lisle Conway, 100 Trinity Place, Syracuse, N. Y.

## "Red Cloud" for M.M.P.C.

Following Program Chairman Joseph Hollywood's plan of showing famous amateur films of the past at meetings of New York's Metropolitan Motion Picture Club, the October meeting featured a revival of "Red Cloud Lives Again," with which Dr. F. R. Loscher of the Los Angeles 8mm. Club won premiere honors in THE AMERICAN CINEMATOGRAPHER'S International Amateur Movie Contest in 1935. Another highlight was "Fire From the Skies," the Civilian Defense sound-film made by the Long Beach (Cal.) Cinema Club. Also shown were "Miscellaneous Meanderings," by Murray Tucker, and "Florida," Grand Prize winner at the 1942 Mineola Fair, by George Mesaros.

ROBERT M. COLES,  
Secretary.

## Minneapolis Interiors

October meeting of the Minneapolis Cine Club, under the guidance of Jerry Peterson, highlighted a demonstration of "Angles on Indoor Filming." As planned, the committee was to shoot a movie of typical indoor scenes often shot in any home, and supplement these with the projection of Kodachrome mini-slides showing the overall plan of lighting, camera and other equipment, accompanied by a talk on lighting by a member of Len Martin's program committee.

ROME RIEBETH.

## Gadget Show for Westwood

The Westwood Movie Club of San Francisco held its first Gadget Exposition on Sept. 25th. This was an innovation in Bay Region amateur movie cir-

cles, and proved a huge success. Throughout the evening a crowd of more than 250—visitors from other Clubs, from the Museum of Art's Photo Forum, students from the University of California movie courses, and individual moviemakers—filled the auditorium where some 75 gadgets made by members of the Club were exhibited and demonstrated. One section of the hall was devoted to the showing of members' prize-winning films, and drew an S.R.O. sign for every performance.

GEORGE LOEHRSEN,  
Publicity Chairman.

## Meters, Sound for Washington S.A.C.

The October 19th meeting of the Washington Society of Amateur Cinematographers featured a talk on proper use of exposure-meters by W. A. Reedy of Weston, a talk on sound-recording by O. W. Hungerford, and the screening by Member Comings of a film describing the National Archives. Members were also asked to bring in their scenarios for the proposed Club Production.

JOHN T. CHEDESTER,  
President.

## "Horse Opera," Election, for 8-16

A horseless "Western," "Buzzard Juice," filmed by the Penn-Art Movie Group, and a mystery, "The Ghost of Greystone Manor," by the same group, highlighted the screen fare at the September meeting of the 8-16 Movie Club of Philadelphia.

Nominations were also made for next year's officers, punctuated by an unusual number of "I declines" as names were proposed. The slate finally nominated included William Bornmann for President, George Burnwood for Vice-President, Phil Oetzel for Treasurer, and Mrs. Helen Bornmann and John Hendricks contesting for the Secretaryship.

LEON MERROW.

## Railroads and Scenery for L. A. C. C.

The October meeting of the Los Angeles Cinema Club was highlighted by a surprise preview of the New York Central System's 800-ft. sound-film "Freight Yard," brought by William Stull, of THE AMERICAN CINEMATOGRAPHER. Mrs. Mildred Zimmerman showed two reels of Kodachrome views of the German countryside filmed in the summer of 1939, and Richard Orlow showed "West of the Rocky Mountains," with musical accompaniment. H. W. "Jimmie" Scarborough, of Winter, Inc., gave a fine talk on ideas for making better pictures.

RAYMOND McMILLIN,  
Secretary-Treasurer.



## Developing Machine

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a considerable extension of the latitude of reversal film processed on the Houston machine. Test exposures at  $f:3.5$  made on a standard reversal emulsion in light which would normally call for an  $f:16$  exposure are stated to have resulted in a readily discernible image, whereas identical overexposures given standard commercial processing resulted in virtually clear celluloid.

Temperature control is obtained in the Houston machine by immersing the solution tanks in a water-jacket which in turn maintained at the correct temperature by refrigerating and heating units, self-contained within the machine. The air supplied to the drying compartment is filtered and electrically heated.

In operation, the machine is remarkably simple. Chemicals for the various solutions are supplied in pre-measured packages, so that all the operator need do is dissolve the contents of the packages in the specified amount of water, and in the order indicated by numbers on the packages. Each package of chemicals provides sufficient solution to process 10,000 feet of film, after which the tanks are drained and fresh solutions mixed.

A very clever arrangement is used to measure precisely the amount of film the machine processes, regardless of how much leader may be spliced between various batches of film. An opaque leader is used, and as the film passes from the dry-box, it passes over a photo-electric cell. This electric eye governs the operation of the footage counter, permitting it to operate only when film with a transmission factor equivalent to that of the densest possible underexposure is scanned. When the completely opaque leader passes the photocell, the footage counter automatically ceases to register. Thus only that film which is actually acted upon by the solutions is registered on the counter.

In the field, the machine's power lead need only be connected to any electric power line, and hoses attached to a water hydrant and drain. Then when a fresh magazine of exposed film is put in place, all that is needed is to press the starting button. Less than thirty minutes later the finished film will come off the machine, ready to project. The usual safeguards against breakage of the film or inattention on the part of the operator are of course supplied, with audible warnings which, if not answered, are followed by automatic stoppage of the machine.

Several hundred of these machines are now in use in various parts of the world by the motion picture section of the U. S. Army Air Forces, operated by Air Force crews specially trained in the Houston plant. Similar machines are also under test by other U. S. Army and Naval photographic units.

Modifications of the machine include a similar machine with non-corrosive met-

allic parts and special, non-spillable tankage for seagoing Naval use, and a slightly larger machine for handling either 16mm. negative or positive, with provision for by-passing the negative-developer tankage when positive film is being developed, and vice-versa. A similar machine is in the experimental stages, employing a two-strand design, with each side of the machine driven semi-independently, so that one side may be developing negative while the other processes positive, or either side operated singly.

For 35mm. a similar, though necessarily larger machine is built, intended primarily for fixed-base operation in a suitable darkroom. The same basic design is followed, and the machine is laid out for one-man operation. Either negative or positive film may be processed, by-passing the negative or positive developer tankage as the case may be. A variable-speed control is provided, allowing a range of from 15 to 30 feet per minute when developing negative, and from 30 to 60 feet per minute when developing positive.

## Canada's Commandos

(Continued from Page 472)

ly rainy. We got up there three days ahead of our scheduled start of shooting, and landed in a typical rainy spell. That continued until the morning of our first shooting day. Then it dawned clear, and stayed that way until the last scene was in the box. Then it turned to and rained again!

We built a complete Norwegian village there on Vancouver Island, and did a large part of our picture right there. There were no roads leading to our location—so we had the experience of using several brand-new Commando landing-barges for seagoing "location trucks." It was quite an experience to chug up the sound in one of those barges, pull up against the beach, drop the gangway, and walk ashore a lot more easily than if we'd had a regular dock—and within a stone's throw of where we were to set up!

Some of the locations were on the strenuous side. Getting the cameras set up on a rocky cliff-side so steep we had to string ropes to help us get into place gave everybody—especially the camera crew and grips—plenty of exercise, and when we had to plant good-sized anti-aircraft guns in similarly inaccessible places, well, we all knew we'd been working by the time the sequence was done!

As we were in the dim-out area, we naturally didn't shoot any night exteriors. However, we filmed plenty of interiors there. Some, we built as practical parts of our sets. Others, we built inside an auditorium at the County Fairgrounds. That was a big, roomy box of a building, excellent for our purposes, even though there was enough reverberation to give the sound men plenty of trouble. But by hanging big panels of burlap around the walls, we

managed to get satisfactory recordings anyhow.

We made several night-effect shots that would be hard to duplicate, in that building, too—scenes of Nazi anti-aircraft crews at their guns and searchlights, and so on. We "cheated" a bit here, illuminating the gun or searchlight, and letting the background and most of the foreground go black, to suggest night. In that, I want to express my appreciation of the cooperation Director Farrow gave me, for as in our previous picture together—"Wake Island"—we were able to work together and let that sort of photographically sketchy treatment build dramatic effectiveness, while at the same time simplifying our production problems.

Another thing that we found surprisingly painless was the sensible way the Canadian authorities handled the problem of censorship. Working right in an active military area, we naturally expected to encounter some censorship difficulties. But we didn't. Our stills had to be developed and examined up there, but the movie film was pre-censored and went through as easily as though we'd been shooting on the home lot. We had liaison officers with us from the Army, Navy and Air Force, of course, and now and then one of them, after checking through the finder as we lined up, would suggest we might move the camera a bit so as not to show this bit of coast-line or that hill. On the other hand, they'd often suggest "Why don't you shoot this . . . or that?" when even though we might have wanted to, we'd decided "this" or "that" might probably be on the military restricted list! Even on the speedy Auxiliary Cruiser the Navy put at our disposal for several days (it was once a well-known CPR Alaska-cruise steamer), there were incredibly few things we couldn't shoot. The only one I remember is a perfectly innocuous-looking radio-aerial . . .!

All told, you've got to hand it to those Canadians for their hospitality and cooperation to visiting picture-makers. We came back with twice the pictures we expected to have. And—once those young Commandos get into action, I think they'll do some "handing out" that, if what they did for our cameras is any criterion, will be most unpleasant for the Nazi or Jap on the receiving end!

## Combat Camera

(Continued from Page 475)

mounted solidly, rather than rotatably, and the turret need only rotate to bring the various lenses into position. There is virtually no play perceptible in either the quick-change lens-mounts or the turret assembly.

The finder is a simple "positive" type, giving a large full-field image for the 35mm. lens, and using an etched frame for the field of the 3-inch objective and the 6-inch telephoto. Two small levers move supplementary optics into place to give a magnified field for the telephoto lens fields. The field of the 10-inch lens



is indicated simply by a central dot, as this lens will probably be used only for extreme distant shots, such as following an airplane, or the like.

In use, the camera is amazing. In the first place, it is incredibly much lighter than one expects since, with the exception of a few small, highly-stressed moving parts, necessarily built of steel, the entire camera is made of magnesium. Loaded and ready for action it weighs but 13 pounds—or 15 pounds when the 10-inch telephoto is in place.

In the hand, the camera balances perfectly. It seems as easy to follow action with it as with a rifle. For stationary shots, the gunstock mount and two-handed grip give incredible steadiness. Motor and movement are so smooth-running that the Cunningham camera is probably the smoothest-starting hand-camera this writer has ever seen. In addition, the pilot-pin registering movement provides for professional steadiness of the screened image.

The new camera owes its inspiration to suggestions made over a year ago to Cunningham by some of the top-ranking members of Commander Ford's Naval Photographic Unit, and has been developed with the benefits of the experience some of these cinematographers have gained in actual service cinematography. The RKO Studio patriotically permitted Cunningham, who heads their precision camera machine-shop, to design and build the first cameras in their plant.

The design, however, has been planned from the start for mass production, so that as and when the military authorities approve it, the cameras can be turned out in quantity in any larger plant accustomed to precision work. It is probable that since 16mm. has taken root so strongly for military cinematography (a development which has taken place since engineering on this camera commenced) a 16mm. adaptation may well be made. It certainly should be.

Cunningham's camera seems certain of a brilliant future as a strictly military instrument, but once the war is over, it should have an even greater future in peacetime cinematography. For when such things are again feasible, it should be unexcelled for newsreel, sports and expeditionary camerawork, as well as for innumerable uses in scientific and industrial cinematography. END.

## Arthur Edeson

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your ability will mean more, and you can be sure of a longer and steadier career?"

Art thought the idea was good. And when, not long after, his friend persuaded the Eclair powers that be to offer Art the post of official studio portrait photographer he accepted with alacrity. He cleared out a corner of the studio laboratory's hypo-room to serve as a darkroom for his still work, and snapped his exposures on the studio stages whenever and wherever he could.

And from the start, his portraits "clicked."

But the more Edeson saw of the picture business, the more clearly he saw that the job he wanted was behind a motion picture camera. Getting there, though, was another matter. There was no possibility of wangling a job as an assistant cameraman, and thence working his way up to First Cameraman. For, thirty years ago there were no assistant cameramen. The cameraman—there was only one to a troupe—did everything. He loaded and unloaded the camera, photographed the scenes, and nearly always edited the picture as well. In his spare time he also shot the stills and developed them.

Moreover, that was in the days of the "trust"—the Motion Picture Patents Company. And whether your studio was a licensed member of the trust, or an outlawed "independent" using presumably unlicensed equipment, the camera—and especially its interior—had to be a profound secret. If an outsider got even a glimpse of the inner workings of a movie camera that glimpse might, if it were a camera of one of the "trust" companies, let out trade secrets to a potential enemy spy; if the camera belonged to an independent, a peek at its mechanism might bring a visit from the "trust's" strong-arm detectives, resulting in a wrecked camera, and maybe a lawsuit, to boot.

None the less, Edeson managed to learn a great deal about cinematography as it was then practiced. In this, he learned partly from observation, and partly from the help of his friend, John Vanderbrook who, he points out, was one of the really great cameramen of that pioneer era.

Eventually, Edeson got a chance as a cameraman. One of the cameramen fell sick during a picture, and at Vanderbrook's suggestion, still-man Edeson was asked to pinch-hit and finish the picture. He did it successfully—and from then on, he was one of Eclair's cameramen.

He had the unique distinction of being the only American cameraman in the employ of this French firm. In those pioneer days before World War I, French directors and French cameramen dominated the creative side of the industry; any studio which had any professional pretensions at all had at least one French director and one French cameraman to lend a touch of *éclat* and genius to its productions. The Eclair studio being an American branch of a French firm (which, by the way, was still operating in France up to the arrival of the Nazis) had Frenchmen in almost all of the key creative posts. Edeson's success as a cameraman under these circumstances was therefore a tremendous tribute to his ability.

At any rate, he so pleased Eclair's owner, M. Jourjon, that he became one of Eclair's leading cameramen.

The work wasn't without its difficulties, however. That was the day when f:64 definition and flat lighting were the rules of the day. Edeson began to intro-

duce some of the lighting ideas he had learned in his portrait work—a suggestion of modelling here, an artistically-placed shadow there. And being trained in portrait work, his work tended to the softer, portrait-like quality he had used in his still work.

"That," he says, "was so completely out of line with what they considered good cinematography in those days that I had to use all sorts of salesmanship to convince them it was good camerawork."

"Privately, I wasn't so sure. In my spare time I did a lot of experimenting, and I just never could get anything critically sharp. While I argued the artistic merits of softness, I did a lot of wondering as to what was the matter."

"In time, I found out. Another producer—he was Jules Brulatour, by the way—was about to make a very special picture. He wanted by friend Vanderbrook; but Vanderbrook was tied up on an assignment for Eclair, and recommended me."

"The camera provided for this picture was equipped with an unusually fine lens—a Goerz Heliar, I believe. Using it, I discovered that my other lens had been defective, inherently unable to produce a really crisp image. I never forgot that first striking lesson in the difference that exists between individual lenses. From then on, I made it a point to study lenses, and learned how to suit the optical qualities of each lens to the job in hand."

This first big assignment of Edeson's was a made-to-order opportunity for a cameraman. Most of the picture was filmed on location in the south, with almost perfect weather conditions, and picturesque locations with magnolias, Spanish moss, and everything a cameraman could ask for pictorial photography. Edeson made the most of it, and turned in a picture so spectacularly beautiful that producer Brulatour was delighted. And when, not long after, the American Eclair company was reorganized as the World Film Co., with Brulatour at its head, Arthur Edeson was recognized as one of the organization's ace cameramen.

He was assigned particularly to photograph the productions of Clara Kimball Young, one of the industry's biggest stars. And when Miss Young left World to form her own Company, he went with her. When her organization moved to the West Coast in 1915, Edeson, too, came west.

In the East, he had been active in the Nation's first organization of motion picture cameramen, the Cinema Camera Club; when he came to Hollywood, he took an active part in an affiliated Western organization, first known as the Static Club, and later as the Cinema Camera Club of California. And when, in 1919, this organization was reorganized to form the American Society of Cinematographers, Arthur Edeson was one of the Charter Members of the A.S.C. He has served actively and continuously on the Society's Board of Governors, and has held almost every office



in the Society with the exception of the presidency, which he has repeatedly declined.

In the early '20's, Edeson joined Douglas Fairbanks, Sr.'s producing organization, which was probably the foremost producing unit in the country. "Working with Doug," he says, "was one of the great experiences of my life. Doug Fairbanks was an inspiration to everyone who worked with him. We often hear about producers, directors and actors in our business who say they are working toward 'bigger, better things;' but all too often it is only disappointing publicity, with no foundation in fact.

"But Doug was really striving to advance motion pictures as an art. He was constantly seeking new and more expressive ways to do things, and he actively welcomed in his organization people who were trying to make similar progress in their own fields.

"Doug had a keen appreciation of the real significance of photography. I don't mean by that that he insisted blindly on 'pretty' photography, regardless of whether or not it fitted the picture. He knew, just as well as any cameraman, that purely pictorial camerawork can sometimes hurt one story just as much as it can help another.

"As an example of this, I remember how we made 'Robin Hood.' Doug, you know, had a unique way of working. He never worked from a script in the formal sense of the word. He would mull things around in his mind for weeks or months until he had the basic story concept worked out mentally to his satisfaction. Then he'd start shooting, working closely with director and cameraman and getting what he wanted, but seldom with anything written down in script form.

"For 'Robin Hood,' the 'script' consisted of half-a-dozen lines scrawled on the back of a piece of paper—just rough and almost undecipherable notes as to 'characters—conflict—intrigue' etc. The rest was locked in Doug's brilliant mind.

"As we began to get really into the picture, I found myself in a quandry. We had some of the most spectacular sets ever built in Hollywood, and with the costumes, the pageantry, and all, I knew the picture offered some of the most spectacular photographic opportunities any cameraman ever had. But I didn't know enough about the story to know whether or not I ought to take advantage of them.

"Finally I went to Doug and asked him. 'Doug,' I told him, 'this is a cameraman's picture if there ever was one. But tell me—if I sock it with everything I've got, will your story stand it? I don't want my photography to overpower the story.'

"Doug told me to go ahead, and I did. And I think the outcome proved he was right, for 'Robin Hood' is still remembered as perhaps Doug's strongest picture. But I'm sure if he had had a weaker story and weaker characterizations, spectacular camerawork could

have submerged them so completely that the picture would have been one of those things everybody would dismiss as being visually beautiful, but without any real punch as a picture.

"It's the same today. I think one of the most important parts of the cameraman's job is determining when to let himself go in photographing a picture, and when to hold himself in. If the story or characterizations are weak, he's got to restrain himself or he'll weaken the picture. But if the story is strong, he can let himself go photographically and be sure he'll help the picture.

"And, granting equal story strength, a variety of different visual treatments are possible. A picture like, say, 'Citizen Kane' or 'The Maltese Falcon' will call for strongly modernistic, eye-arresting camerawork. A picture like, say, 'The Great Waltz,' or 'The Chocolate Soldier,' would be ruined by that treatment—they demand a highly pictorial, romanticized touch. And there are always some pictures—you'll find them in a majority of the 'B's'—where the camera should be just as inconspicuous as possible, to heighten the illusion of realism, and maybe to keep from overpowering a weak story.

"The best thing, I think, is to strive to keep things always as simple as possible, photographically speaking. The principal things are always your story and actors: if you keep your compositions and lightings simple, placing the accent rather on them than on the camera, or on mere decorativeness, you can't go very far wrong." END.

## Railroadin'

(Continued from Page 481)

train to pass. He had the driver stop, we jumped out of the car, Boland carrying the tripod and I the camera, and raced for a wire fence between the highway and the tracks.

He found a hole used by dogs to crawl under, so we emulated canines, slid under the fence and dashed across the tracks, set up the camera, composed the scene with the steeple in the center background, and started the camera. The scene showed that we beat the train by about four feet of film before it rolled into the picture. Imagine doing shots like these in 35mm. Technicolor — or black-and-white, for that matter!

To cool off, we finished the day by shooting the icing of refrigerator cars.

At St. Louis we captured some remarkable shots of huge grain-elevators and their operation in connection with railroads. Boland had me compose one long-shot of a huge group of grain storage-elevators in which he planted some wild wheat for a cluster to break the foreground. Nice clouds framed the structures, too. Jack made us a deal after this sequence. He said that if we didn't mind covering the arrival of the "Rebel," one of the mid-continent's most famous trains, during the lunch hour instead of eating lunch, he would take us to see the Cardinals play Pittsburg. Well—we saw

the game and ate hot dogs for lunch . . . we weren't suckers!

Finally, back to Los Angeles where our toughest shots were yet to be filmed. The Union Pacific loaned us their streamliner "City of Los Angeles" to use between arrival in the morning and departure that night as a setting for our modern train interior sequences. This presented a difficult lighting problem. We were compelled to shoot on the train because authenticity was the paramount object of this picture. No process shots were allowed!

We had to install a "Jennie" in the baggage-car and run cables the length of the train. From the baggage-car to the observation-car required 3500 feet of four-ought cable. And that caused enough drop in the power load to affect color considerably. However, a swell crew and good filtering brought us within a pretty natural color range even on that observation-car shot. Scenes in the diner, lounge-car, Pullman and chair-cars were less difficult, although they offered their own peculiar problems too. We had five hours to get all our scenes and off the train that day—and we made it, in spite of all the varied temperaments of actors, grips, juicers, railroad men, etc.

Among the rocks at Iverson's ranch we staged a cattle-rustling scene, a dust-storm, a hurricane, primitive home construction, farming, and other pioneering scenes. At the old Inglewood station we re-enacted early railroading sequences.

For one sequence in the pioneering portion of our film, the script called for shots of longhorn cattle. The only place in America where longhorns are yet to be found, we learned, is the government game reserve near Cache, Oklahoma, so Boland and I caught the sleeper plane for Oklahoma City, drove to the game reserve in the morning and by noon the rangers had rounded up a huge herd for us to film.

From noon until about four in the afternoon we spent shooting that herd of longhorns from every conceivable angle; close-ups, medium-shots, long-shots, high shots, low shots. Nearly every scene required the herd to pass close by the camera, either coming toward it or going away. That day Boland reached a directorial pinnacle even a De Mille might envy. He discovered he could make longhorns go any direction *they* wanted to go!

After we finished, we drove to a nearby refreshment center where we consumed at least half a dozen "cokes" each. While imbibing so delicately the superintendent of the reserve casually mentioned that this was the first time in a long while that the herd hadn't attacked persons on foot . . . and Boland and I had been on our feet next to the camera all that afternoon!

To sum up, we covered more than 50,000 miles in just under 60 days, via airplanes, taxis, and the seat of our trousers, to film "Railroadin'" in color, under *actual, authentic conditions*, thanks to Kodachrome and efficient 16mm. cameras and crew. END.

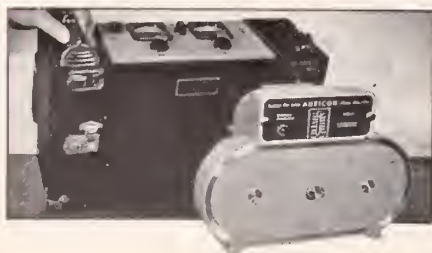


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## Sunshade

(Continued from Page 485)

CINEMATOGRAPHER, as a means of perhaps returning to that magazine and its readers a little of the help many of its articles have in the past given me. However, I hope that if either now or in the future some enterprising manufacturer manages to get around the problem of priorities sufficiently to be able to put a somewhat more finished version of this sunshade on the commercial market, he will extend me the courtesy of sending me a sample so that my little idea, grown up and dressed up, may perhaps some day come home to roost on my camera! **END.**

## Off the Beaten Path

(Continued from Page 487)

positions and action so that the main points of interest are so located that in spite of the difficulties the net result is one of consistently correct exposure."

In spite of the midsummer weather the abundant snow in the higher reaches shared with the great clouds the many honors bestowed by the photographer. To secure full returns from the snow Mr. Parker developed into a patient waiter for the appearance of the clouds. And the patience was awarded.

The snow and the clouds made a splendid backing for many of the shots of waters that were exposed. There were great tumbling falls and racing but smoothly gliding streams sparkling in the sunlight.

The scenery shots were lightened and heightened by "bits" of fellow-packers, of stopovers for luncheon or at the trail's end for the day. In one of the sequences there was a group of four girls in one party, in one good-looking party, it may be added, the appearance of which on the screen added to the interest.

There was a close-up of the rare golden mantle squirrel feeding out of a child's hands. There was another shot of a plenty-horned buck eating candy being fed to him by a little boy and girl. The photographer knew should either of the children withhold the candy in an attempt to tease the big animal they would be in grave danger of being gored by the buck; they were accordingly warned.

Many of the shots were with telephoto lens. One that caused amusement among the women guests on the evening of the showing was described as around a school-teacher, disporting her ample self arrayed in Coney Island garb—at 9200 feet altitude. She was unconcerned, nevertheless; but she saw not the revealing camera which recorded the mountainous overexposure.

Technically the pictures rate. Exposure was uniformly excellent—all the more so when it is considered the photographer was thrown entirely on his own through the conniving, bouncing mule. So also was excellent the depth of focus, extreme clarity standing out in distance shots.

Good judgment was displayed in cutting, in pacing the sequences of human

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interest with vistas of piling mountains and spreading valleys, of all the spots that could be found by a veteran Yosemitean on a patient hunt for something new. And how well he succeeded! **END.**

## Planning a Script

(Continued from Page 484)

trousers, the other stands at his shoulder. They try to arrest his attention.

*Scene 12:* Close-up of the Sunday paper. It comes down and Father's face appears, with a scowl.

*Scene 13:* Medium-shot (as in Scene 11). The children jump up and down in excitement.

*Scene 14:* Two-shot of the children. They say, "Can we go on a picnic, daddy?"

*Scene 15:* Close-up of father. He shakes his head.

*Scene 16:* Two-shot of the children. Very sad. They ask "why?"

*Scene 17:* Medium-shot, father and children. He looks from one to the other and then motions to them to follow him. They exit.

*Scene 18:* Medium-shot, mother. She smiles, puts down her sewing and exits.

*Scene 19:* Medium long-shot, corner of house. Around it come father, mother and children. Father is still arguing, children pleading, mother smiling. They walk past camera.

*Scene 20:* Medium-shot, car in driveway. Family around it.

*Scene 21:* Medium close-up. Father takes yardstick, takes cap off gas-tank, thrusts in stick.

*Scene 22:* Two-shot of children. Very concerned with the proceedings.

*Scene 23:* Medium close-up of the yardstick, showing very little gas in the car, and father's face, showing great satisfaction.

*Scene 24:* Medium-shot (as in Scene 20). Father leans back on bumper, satisfied that he has proved his point. Children dejected.

*Scene 25:* Medium close-up. Mother says, "Let's walk".

*Scene 26:* Medium-shot. Children jump up and down excitedly again. Father stands up and stares at mother.

*Scene 27:* Close-up, father. With a horrified expression he asks, "Walk?"

*Scene 28:* Medium long-shot, corner of a house. Family exits around corner. Children very animated. Father dragging himself along in the rear. Fade out.

*Scene 29:* Fade in. Medium long-shot, corner of house (same as Scene 28). Family enters, dressed for picnic, and walks through scene.

*Scene 30:* Long-shot, the street outside the house, the family disappearing in the distance. Fade out.

As a finale for the picture the family can be shown coming home as in Scene 30. In this instance they walk into the camera.

*Scene 31:* Long-shot (as in Scene 30). Family walks toward camera, tired but happy. Father brings up the rear loaded down with baskets, books, toys, etc.

*Scene 32:* Close-up, foot-bath full of steaming water in which four pair of feet are resting. An appropriate scene over which to superimpose "the end".

The above prelude to the picnic, broken up into thirty scenes or set-ups, sounds like a lot of work. Actually it is a lot easier than unplanned shooting, and it saves film by making every foot count. In shooting it, take all the long-shots in a sequence first, then the medium long-shots, then the medium-shots, and so on till you have moved in to the close-ups.

This is simple if a list, similar to the one above, is made of the contemplated action, and then is regrouped according to the shooting schedule. For instance Scenes 3, 5, and 11 can be shot from the same camera position. So can 8, 10 and 18, moving in just a little from that spot for Scene 6. In the same way, Scenes 19, 28 and 29 can be made from the same, or nearly the same camera position, and Scenes 30 and 31 can be made at the same time, from the same camera set-up.

Working this way, from a written

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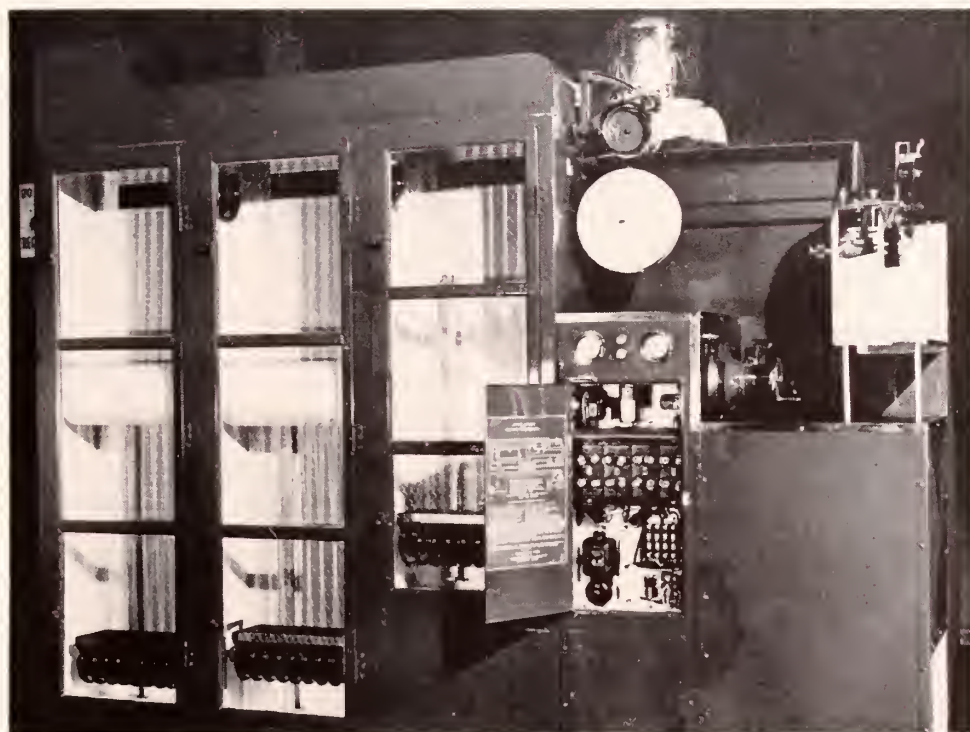
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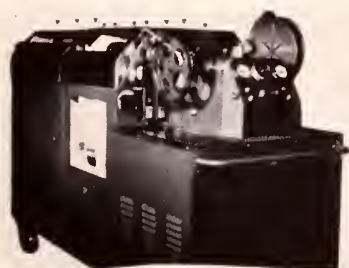
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plan, it's easy to get continuity into your pictures. And in the process, you'll find script-writing loses all its supposed terrors. Try it! END.

## Editing Case

(Continued from Page 483)

way, you can just run your electric cord from the light socket on the back-wall to the plug-in on the side wall, and from



there continue the same line out to be plugged into the handiest outlet in the room. If you want to have a more finished job, wire your electric line to a countersunk male connection on the outside of the box, and then have a separate feed line which you plug into the same way you plug in a projector cable.

You can leave the inside of the box in its natural state, or paint it white; the latter is probably preferable from a practical standpoint, and it certainly looks better. You can paint numbers inside each of the 120 little pigeon-holes in the film-storage compartment, or you can simply identify each scene by putting a small piece of paper back of the film, with a pencilled notation as to what that scene is.

In editing a film for continuity, I start at the bottom of the film-storage compartment, working from right to left. The first hole contains the leader, the second, the main title, and so on. Each piece of film is noted on a sheet of paper, and placed in the proper pigeon-hole, corresponding to the order in which the scene will appear in the finished film.

It is a very simple matter then to start splicing the film together in proper order, taking each scene from its pigeon-hole as you need it. And the first thing you know, your disconnected scenes have been assembled into a complete movie story. Unless you're making an un-

usually long super-picture, there will usually be plenty of pigeon-holes left over for storing odd pieces of film, too.

Editing film this way is easy, and if someone comes to call when you're right in the middle of the job, just close the lid to the film-storage compartment, close the box, and your whole editing job is arranged just the way you left it. You can put the box away in the closet, confident that you won't lose or disarrange the film, and that everything is safe and dust-proof. Then when you have some more time to work on your editing, you can take the box anywhere—den, living-room, office or anywhere else—and go right ahead with the work just as though there hadn't been any interruption. And the film will be just as ready and just as safe, whether it's tomorrow night, or a month from tomorrow! END.

## "Strobo-Sync"

(Continued from Page 482)

with a stop-watch and checking for any difference in speed. This should be done with both recorders cutting a test disc at the same point from the disc's center and at the same time. Any speed difference should be corrected before attempting to record or play back your discs.

If only one recording unit is available, and in most cases this will be true, the production will have to be broken down into units; the length of each unit being governed by the length of playing time of each recording. In making the first disc the recorder and the projector should be carefully synchronized by means of a check rehearsal using the reflected light from the screen or the leaked light from the projection beam directed upon the strobe disc to bring the projector up to 16 $\frac{2}{3}$  frames per second.

Then, after the correct strobe band matching the number of blades of the shutter has been selected, and "stopped" by the projector's flicker, the projector thoroughly warmed up and reloaded, and the ending frame of the first recording unit marked and timed, everything is ready for the first take. (Incidentally it is wise to select and mark a frame several frames preceding the first title or picture and use this as a "sync" mark—starting the film here for recording and each playback.)

At the signal from the recordist, both the music and the projector should be started at the same time. Immediately the strobe should be checked for synchronization and any minor adjustment in projector speed that might be necessary made. Then throughout the entire recording the strobe should be checked to hold synchronization constant.

If dual recorders are used, each changeover point should be noted on the film and if possible should be at the end of a scene for convenience in later playback syncing.

However, in using one recorder it will be necessary to stop the projector at the end of each disc, mark the ending frame

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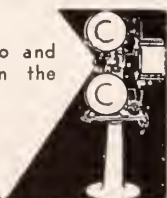
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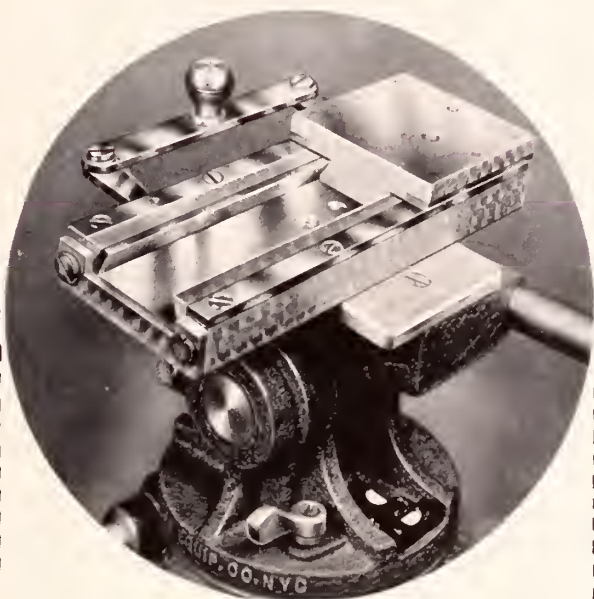
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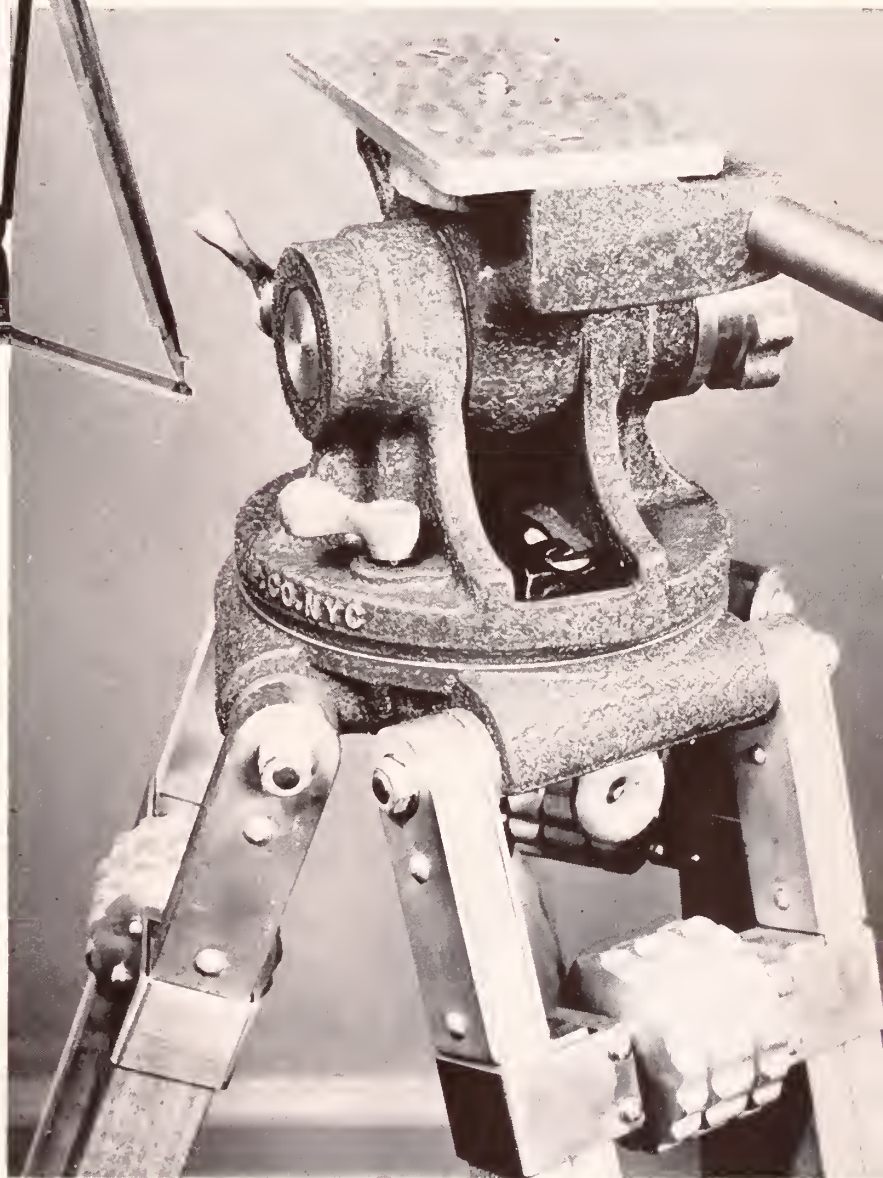


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with a single hole punched through it, and back up the film several feet so that the projector will be up to speed and in sync when the next take begins. This punch-mark should be large enough so

that it can be readily seen by the projectionist and others concerned with the recording as it will serve as a cue to start the succeeding take and will serve as a change-over mark in later play-backs.

The recording of the second and succeeding units should be started the same as the first unit with the exception that the music or commentary takes its cue to start from the punch-mark on the screen, as the projector will be running first. In other words, the recorder will start, and as soon as the cutting is checked, the projector will start, and syncing must be established before the punch or change-over mark shows on the screen—for when this mark shows, the sounding will commence for this unit.

Following the making of the recordings, a heavy mark should be made at the beginning of each record where the cutting stylus started to cut. This should be quite heavy so that the reproducing needle can be set in it easily in the dark during showings. A smart idea is to paint with luminous paint (which can be bought in any 5 and 10c store) a small "U" around the groove's beginning. The needle can be set in this in the dark and thus accurately engage the groove's beginning.

Count with a stop-watch the number of seconds needed for the recording to run from this point to the first note of music. Then, by multiplying this by  $16\frac{2}{3}$  frames per second, (The speed of the projector when in perfect sync), the number of frames preceding the change-over mark to start the record can be learned. For instance, if it takes six seconds to run off the lead grooves of the disc, this multiplied by  $16\frac{2}{3}$  would set the start mark of that disc exactly one hundred frames before the change-over mark.

Here two small punch-marks should be made in the film so as to signal the projectionist to start the next record for the take or unit following. By the time the change-over mark shows up, the disc just released will be in sync with the film, and when the switch from one disc to the next is done there will be no break in either the commentary or music, and synchronization will be maintained throughout.

To prevent any possible miss of the start mark, a third mark might be put on the film, say five seconds preceding the start-mark, and thus a projectionist unfamiliar with film would not be caught unprepared and thus lose synchronization when the change-over mark shows up.

For persons with only one playback table, the above procedure can be followed out with only slight modifications. Time yourself to see how long it will take you to change records in the dark and find the opening groove of the next record. Allow this time to elapse at the end of each unit during recording and then stop the film. Make a *temporary* mark on the film and then let the projector run for an additional *six* seconds before stopping the projector, a second time.

Better yet, count off 100 frames *in advance* from the temporary mark and make your change-over mark here. Now back up your film to the temporary mark and start both the recorder and the projector at the same time. When the change-over mark flashes on the screen, start your sound for the second unit.

After this unit has been finished (and this should also be done for each succeeding unit), count the number of seconds needed for the *playback* turntable to run in from the beginning of the opening groove to the first note of sound, and multiply this by  $16\frac{2}{3}$ . The result should be about one hundred frames or back to the temporary start mark.

However differences in pickup speed of the recorder and playback tables may alter this, so the final start mark should be made to correspond with the length of time needed to "run in" the recording on the playback turntable.

This will allow a silent period during the showing of the finished production equal to the length of time needed to change records *plus* the time needed to "run in" the new record to its sound, but will not necessitate stopping the show or interrupting it in any other way.

During all of the above, and especially at the change-over periods, the strobe discs should be very carefully watched, as syncing may be affected by power fluctuations due to the starting and stopping of turntables which in turn may change the speed of lighter projectors. Carefully followed, syncing of 78-rpm discs may be worked out close enough to permit lip-motion synchronization. However, this should not be tried until the operator and all concerned are thoroughly familiar with the routine.

The method outlined above will enable persons with ordinary phonograph equipment to add sound to their films with a minimum of initial expense and a maximum of quality and satisfaction. Of course it will be realized that the success of any such procedure hinges directly upon the care taken and the

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forethought applied to the production before it is actually recorded, as well as during the recording and final play-backs. END.

### Post-Recording

(Continued from Page 477)

acoustically perfect room, with the voices ideally close to the microphone. In addition, this method also makes possible the substitution of voices, so that one actor—or an actual workman—can be used for the picture, and a different actor for the voice in instances where it is not possible to find a single person who is completely suitable for both.

This aspect, I believe, will be of increasing importance in making today's industrial training films and propaganda or morale films with dialog scenes laid in armament factories, shipyards, and similar plants. In many of these plants, the general noise level is so high that really satisfactory dialog recording could not be obtained by any other method. Moreover, while it is not too difficult to select a real workman who looks appropriately the part for such scenes, it would usually be too much to expect the average real workman to be able to read lines as effectively as may be necessary to convey the instructive or emotional message of the scene.

In such instances, this type of voice doubling will prove invaluable, even in addition to the advantage it offers of simplifying the problem of equipment, and making it possible to film dialog scenes in the field rather than on a studio set. END.

### Battle for Moscow

(Continued from Page 471)

Groups of men are scattered all over the battlefield. Shouting, "Hurrah! For our country, for Stalin!" men rise from the trenches and dash forward.

One minute ago these men were pressed close to the walls of the trenches, shrinking at the loud whining of shells. Now in a burst of enthusiasm they are rushing forward against the enemy, paying no attention to exploding mines all around. One commander shouts something, brandishing his revolver. Then he falls, apparently wounded in one leg, rises on the other and con-

tinues to shout, urging his men on. We, too, swept by the general enthusiasm, rise from the trenches and begin filming the engagement.

That day the enemy in our sector wavered and began to fall back. . . .

Shock troops of Major General Zakhvatiev were engaged in a battle for the village of Spasomazkino. We left our car in a deep ravine about a mile and a half from the village. The road toward the village was kept under strong fire. Very often we had to crawl and snow got into our felt boots, sheepskin coat sleeves and camera. The camera's mechanism was affected by frost and for each filming it was necessary, while lying in the snow, to warm it beneath the sheepskin. A battle was being fought on the outskirts of the village. Our men were vigorously dislodging German automatic riflemen from all shelters.

Near the school we beheld a terrible picture which we will never forget: Thrown together in a heap lay the dead bodies of old men, women and children. Some had legs and arms broken, others disfigured faces. All had been shot with automatic rifles. Somewhat aside lay embraced an old peasant and a young woman with an infant in her arms. Why had those people been shot? The infant had apparently been wrapped in a kerchief or blanket. This the Germans had torn off, and the woman had pressed the naked body of her infant daughter to her own. Bullets had pierced the child's shoulder and breast, the blood was congealed in scarlet strips.

Our men, their automatic rifles still steaming, stopped near the dead and then silently, with lips compressed, proceeded to the place from which came the noise of rifle shots and reports of exploding hand grenades. Soon German resistance was broken and our troops, advancing in a long column, entered the village. . . .

Below I see black dots in motion. There are German soldiers scurrying in all directions.

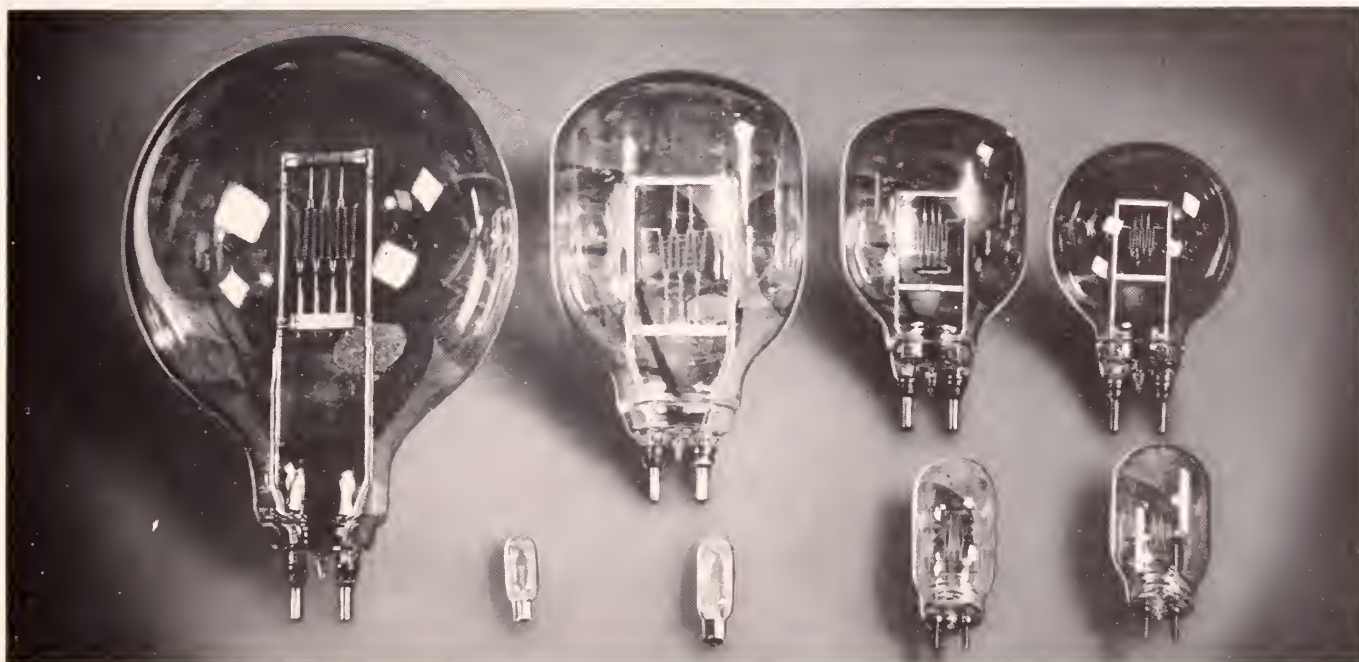
I scarcely manage to turn aside somewhat before the gunner opens machine gun fire upon the dispersing enemy infantry and machines. Then discerning something in a side window, he goes up toward a machine-gun and opens fire. "A fascist plane," I say to myself. Two of our pursuit planes pass above us, heading straight for the enemy. As if racing they keep overtaking each other. I prepare the camera for filming.

A bright sun shines straight into the cockpit. It has dispelled the mist and several rays are on the gunner's smiling face. The plane flies smoothly, confi-

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dently. We pass over enemy positions. Below we see several explosions of anti-aircraft shells. The Germans apparently collected their wits and decided to ambush us on the way back.

For three days after that we filmed the life of fighting fliers. . . .

Heavy snow. Mist. This could hardly be called flying weather. But the planes prepared for flying: bombs were put in

place, machine-guns loaded. Pursuit planes were to accompany the bombers. We motion picture cameramen flew in two separate planes.

Each of us took up a position in the rear of the cockpit of the dive bombers alongside the gunner and wireless operator. Each motion and turn were figured out beforehand so that we could do our work and not be in the way of the gunner. Over us flew pursuit planes guarding the heavier machines.

Two enemy planes, Junkers 88's, appear in front of us. They avoid an engagement. I descend to the lower hatch where I squeeze alongside the machine-gun. The pose is rather unusual: feet resting on the seat above and head below, pressing against the machine-gun. Eyes water, there is a rush of blood to the head.

A long ribbon road cuts the snowy waste. There are black dots on the road—tanks and lorries. Somewhat farther away we discern a river crossing.

Bombs are released from the plane. Many bombs. They drop with a rush, and in a few seconds flashes of explosions appear along tank and infantry columns. One bomb hit a crossing. Soon fires burst out. The fascist lorries and tanks are burning. I grip the camera and film in a sort of frenzy, overcome with the hatred I feel for the enemies of my country.

Our plane climbs a bit, makes a turn and then dives. A noiseless drop along the incline, accompanied by the howling of a wind which within a fraction of a second swells into a roar. I can hardly catch my breath and my eyes smart. An invisible force pins me to the board and seems to be breaking my body. Then the plane straightens out. . . .

The beautiful church of Volokolamsk monastery was sacked by the Germans. After their retreat, smashed icons, torn paintings and Books of the Gospel were found scattered on the floor.

The local Ethnographic Museum fared even worse. Not a single exhibit was left undamaged. The Germans even tore the skin off a stuffed bear. The huge bear lay prone on the floor with paws outstretched. The skin was gone—only the grey canvas remained, with holes where the felt stuffing stuck out. The director of the museum had witnessed how the Germans had divided among themselves the skin removed from the bear. One carved out a pair of boots, another took enough for mittens, still another was going to have a cap made. The poor bear was left naked. . . . END.



### New G-E Representative

Above is Henry J. Chanon, new Los Angeles lighting engineer for General Electric. Widely known as an industrial lighting engineer and a specialist in blackout and "black light" problems, Chanon succeeds W. H. Robinson, Jr., called East to head General Electric's new electronics branch, and Alston Rodgers, now on duty with the U. S. Navy.

### STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933,

Of The American Cinematographer, published monthly at Los Angeles, California, for October 1st, 1942.

State of California } ss.  
County of Los Angeles }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared William Stull, who, having been duly sworn according to law, deposes and says that he is the Editor of the AMERICAN CINEMATOGRAPHER and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

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5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is..... (This information is required from daily publications only.)

(Signed) WILLIAM STULL,  
Editor.

Sworn to and subscribed before me this 29th day of September, 1942.

(Seal.) JNO. A. ERNST,  
Notary Public in and for the County of Los Angeles, State of California.  
(My commission expires July 24, 1946.)

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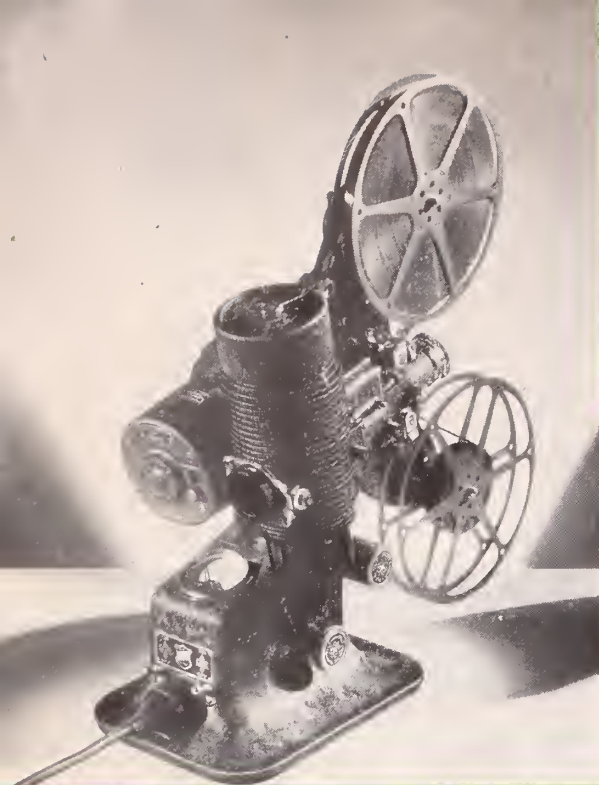
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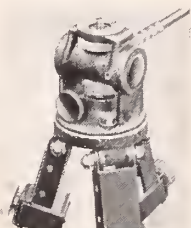
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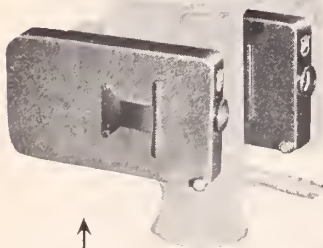


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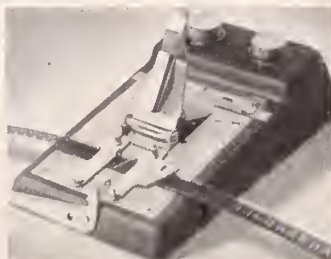
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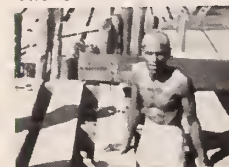


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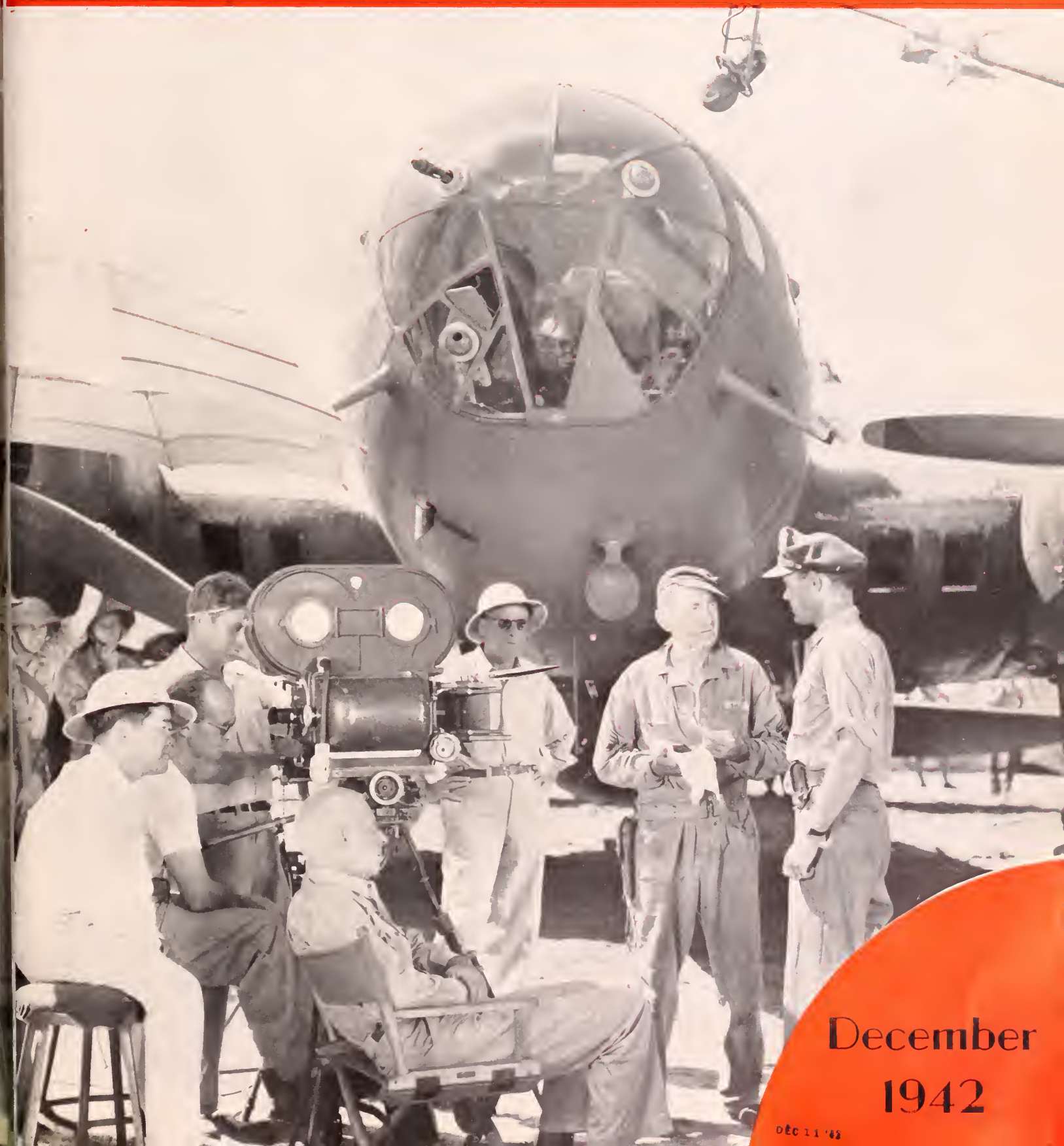


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★ THE MOTION PICTURE CAMERA MAGAZINE ★



December  
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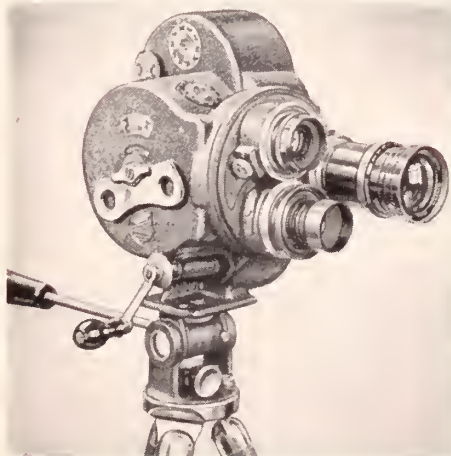


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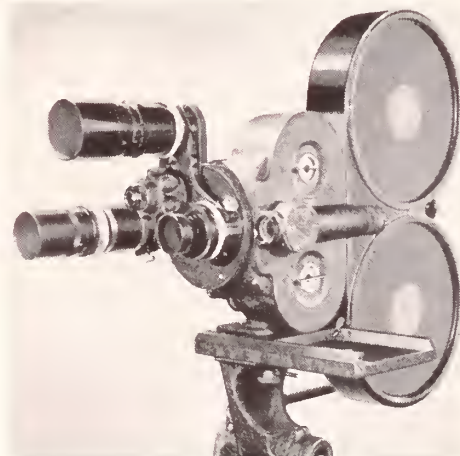
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# AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 23

DECEMBER, 1942

NO. 12

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## The Front Cover

This month's cover shows James Wong Howe, A.S.C. (seated at left in sun-helmet) photographing a scene for Warner Bros.' forthcoming special, "Air Force," beneath the dragon-like nose of a Flying Fortress. Note use of wind-cover on microphone overhead.







A "soft" explosion from "The Commandos Strike At Dawn." Note use of smoke of contrasting colors for photographic effect. Driver of truck, seen running in left background, is actually in more danger than recumbent soldier nearer blast.

ground is dark, as was the case in many scenes in "The Commandos Strike At Dawn," which were played against a background of dark-toned trees, an explosion of white smoke will photograph better. Sometimes, as in the illustration on Page 510, we may find it effective to set off a light-smoke explosion in front of a black one, so that the two stand out in contrast against each other as well as against the background.

To produce this colored smoke, we add to the basic charge of a few sticks of dynamite and gunpowder some chemicals to produce smoke of the desired color. For black smoke, we sometimes use a mixture of carbon tetrachloride and benzol, and sometimes a patented product called "Patch's Black Smoke."

To get white smoke, we can use either sound flash powder, or "Patch's White Smoke." As a matter of fact, it is possible to get smoke of almost any color if we're making a picture in Technicolor. And for flaming sparks and embers, we simply add some Roman candle balls.

Then we have to determine how we want our explosion to look: whether we want it "hard" or "soft," and whether it is to tower up high, or be lower and mushroom out sideways. A "hard" explosion is like the one in the bottom picture on Page 511—not much smoke, but a fair amount of fine dirt and fragments of wreckage. It probably looks a good deal more like the real thing, but it isn't so effective pictorially as the one at the top of the page. A "soft" explosion makes use of pictorial masses of billowy smoke, and usually looks much more impressive on the screen.

The way an explosion will perform can be measured quite accurately according to the amount of explosive used, and the way it is placed. In most cases we bury the charge about three feet in the ground: and as most of the explosion will naturally take the easiest way out—that is, where the covering earth has been removed and then replaced—if the charge is in a deepish, comparatively narrow hole, with straight sides, it will do most of its exploding upward. If the hole is shallower, wider and with more flaring sides, the explosion will naturally spread out more.

The type of ground is extremely important. Identical charges would perform quite differently in hard, solidly packed ground and in loose, sandy soil. The best location I've ever seen for explosion work was the one used for "Wake Island." Down by the Salton Sea, the ground is a sandy clay which is absolutely perfect for staging blasts.

If you're working in rocky or gravelly soil, full of stones, be sure you clear all the rocks away from the vicinity of your charge, and especially from the earth you fill in over your charge. Those rocks can fly like bullets—and

# Explosions—Made To Order

By BARNEY WOLF\*

**E**XPLSION-effects are playing an increasing part in pictures lately—not only in theatrical pictures for entertainment, but in training films for the Armed Services made either by Hollywood's studios or by the various Service film units. And an explosion that is satisfactory for picture purposes has to be different in many ways from an explosion intended only to do the work of industrial or military destruction.

First of all, a motion picture explosion must be *safe*. No picture—however important for entertainment or training—is worth endangering human life.

Second—and almost equally important—a movie explosion must be photogenic. It must be effective and "big looking" pictorially, and furnish a definite photographic contrast with its background. As a matter of fact, most of the explosions in actual battle scenes are rather disappointing photographically, in spite of all the actual destruction they create. A properly handled movie explosion, even though it packs but a small fraction of the destructive wallop of even a small

shell or bomb, will create a better looking explosion than most real shellbursts.

When working on a studio back-lot within the city, there's often a very contradictory third requirement, for under such conditions the studio explosion must look vicious—and yet be nearly noiseless!

During the past twenty or twenty-five years Hollywood's explosives experts or "powder men," among whom I am proud to be included, have developed highly specialized methods of making these cinematic explosions. I hope this necessarily brief discussion of some of these principles will be of interest to the general reader, and maybe offer some practical help to Army and Navy cinematographers making training films for their services.

The first step in making an explosion for picture purposes is to determine what kind of an explosion we want. For example, what sort of a background do we have? If it's largely light, like sky and open ocean, (as in "Wake Island") the smoke of the explosion should be dark, so it will stand out prominently against its background. Obviously, in a black-and-white picture, a light-toned explosion would be pretty well lost against a light-toned sky background. On the other hand, if the back-

\* The author is one of Hollywood's many unpublicized technical specialists. As a "powder man" he is one of the industry's top experts on staging explosions. Among his recent films are "Wake Island," "The Commandos Strike at Dawn," and, currently, "China."—The Editor.



just as dangerously! If you want to produce the effect of rocks and clods being thrown up by the blast, mix in ground cork with your refill earth. You can use cork pieces of any size from about the size of a pea up to a chunk as big as a man's head. Painted black, so they'll show up clearly, they look dangerous, but aren't. Even if a big one hit you, it wouldn't hurt.

Making my charge, I begin by taking a waxed paper or cellophane bag and putting in half a pound or so of flashpowder for a primer. Into the mouth of the bag I insert an electric detonator and its lead wire. Then I tape the mouth of the bag tightly around the lead-in wire, and the primer is ready.

Around this, I build the rest of the charge—usually from three to five or six sticks of dynamite. This can then be put in a sack—a paper bag will do. If the charge is to be used in moist ground or under water, I dip the whole sack repeatedly into melted paraffin—not too hot—until the whole thing is sealed water-tight. A charge like that can be left under water for months, yet will still be dry and ready to go off when the current reaches the detonator.

As a matter of safety, by the way, I usually duplicate the detonators and their wiring, so that if one fails, or only ignites part of the charge, the other will complete the job. Actually, a single "det" is probably enough, but the duplication makes things more positive, and accordingly safer.

The wires leading from the detonator to your control and the battery that fires the charge should be led out of the scene as directly as possible, but of course concealed from the camera. Sometimes you can bury it all the way; at other times, it may be more practical to carry the wire only part way underground, and let it run above-ground the rest of the way, concealed in the grass or behind some natural concealment. In the picture on Page 510, for example, if you look closely you may be able to see the wire running out of the picture to the left, from where it went around to my switchboard.

In scenes representing bombing or shellfire, we may often have a dozen or more charges planted for a single scene, all connected to a single control-panel or switchboard so that they can be fired in the right timing. It sounds very nice to read press agents' releases describing the powder man as sitting at a switchboard like the console of an organ, running his fingers over keys or buttons. But personally I prefer a simple panel equipped with prosaic-looking single-pole, single-throw switches. That way, you can tell at a glance which charges have been fired at any moment, and which are still live. That's often a mighty important detail when some player or stunt man muffs his directions and—as sometimes happens—throws himself down "dead" right on top of one of your charges, instead of

a few feet away, as you've told him to do! If you can tell in a split second that that charge is still live, the player is likely to stay alive, too.

Another important thing to remember in wiring explosions, especially where for a barrage effect or the like you wire several charges more or less in a line, is that often the explosion's effects will travel faster than the electricity that shoots the charges off. I recall one instance where I had wired a number of charges in parallel, to go off at the same time. When I pressed the switch there was an awful anticlimax: only the first charge went off! When I checked the charges, their detonators and the wiring, I found that everything was OK—except that when the first charge went it went so quickly that it sheared off the cable beyond it before the current could travel on and fire the next charge!

We often need gunshot effects these days, to show rifle or machine-gun bullets peppering all around some character. To do this we usually use squibs, fired by detonators, and buried in the ground in the desired pattern. In wood, or the like, we bore holes from the back side of the plank almost to the front, and insert our squib or det from the rear. When it fires, it blows out a neat little bullet-shaped hole which looks just as though a bullet had made it, going the opposite direction.

I usually wire these in a sort of series-parallel hook-up. I connect one wire from all the dets to a common line leading to one side of the battery. Then I join the other wires from each two adjacent dets together, and lead this to a metal contact on my switchboard. These contacts for all of the various pairs of dets are arranged on the board in a line. When the time comes to fire, I take a wire from the other terminal of the battery and simply stroke it along the line of contacts, firing the squibs one after the other. By varying the timing of this stroking motion, you can get a very convincing effect of fire from a machine-gun, tommy-gun, or automatic rifle.

In all of this work complete understanding and cooperation between the director, cinematographer, actors and the powder man is vital. If the director and cinematographer are willing to work with the explosives specialist—willing sometimes to move the camera a bit to this side or the other, or up or down, or alter the angle to a slightly longer or closer one, so he can stage a given action in a more favorable spot, it's likely to make the difference between an indifferent shot and a good one, a hard one or an easy one, and—much more important—sometimes between a safe one and a dangerous one.

This cooperation is, if possible, even more important on the part of the actors in the scene, whether they're principals, extras or stunt men, for their own safety depends on it. An experienced explosives man can predict with



Above: two "soft" explosions from "The Commandos Strike At Dawn" and "Wake Island." Bottom: a "hard" explosion.

almost 100% accuracy just what any given explosion will do. If the people who appear in that scene do as he tells them, they are perfectly safe. If they don't, they're likely to get hurt.

I recall a book in which some author once quoted the advice given by an old, experienced diplomat to a young assistant. "Above all," he said, "no zeal." That's the sum and substance of the actor's job in an explosion scene. If he does precisely what the powder man tells him, he'll be all right. If he gets over zealous and tries to put an extra thrill in it, or if he's over-cautious and errs on the other side, he's walking in danger either way.

For example, when we were in Canada making "The Commandos Strike At Dawn," we had a scene in which a German motorcycle-rider comes up a road and is ambushed by the Commandos, who bring him down with a well-placed grenade. I told the young Commando who played our Nazi that when he saw the other actor throw the

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# Where Do I Go From Here?

By CAPT. BRYAN LANGLEY\*

"JOIN the Army and see the world" is a slogan with which we are all familiar. And certainly Korda's *Magic Carpet* has nothing on Army Film Unit adventures . . .

I left England in February, 1941, bound for West Africa in company with Osmond Borradaile and my Eyemo. Borradaile had his Newman and between us we had a few thousand feet of film. As it was intended for us to fly from West Africa to the Middle East our baggage was cut down to forty pounds and one camera each. The rest of our baggage, with second camera and vast quantities of film, was to follow us by sea round the Cape. I found it impossible to cater for both Arctic Atlantic conditions and Equatorial African temperatures in forty pounds, of which at least ten was the weight of my suitcase.

Our voyage to West Africa was absolutely uneventful excepting for one occasion when the look-out man thought he'd spotted a submarine emerging under our bows: "Action stations—submarine on the port bow" . . . It turned out to be a whale! We also had a cheap thrill by being only fifty miles from the "Scharnhorst." She went the other way, so we could talk about it.

Borradaile was a very pleasant companion and we spent many long days discussing movies and how they should be made. Bordie is a very experienced traveller and we re-enacted the famous "Boyhood of Sir Walter Raleigh" painting, with me as the audience. He kept impressing on me the danger of getting sunstroke and how quickly one gets burnt in the tropics—in fact he gave me a demonstration by getting sunburnt himself and having to stay in bed for two days. I was duly impressed and in consequence usually took adequate precautions.

We waited in Lagos some considerable time for air passage to Cairo. This being my first visit to the tropics I enjoyed myself hugely, even going so far as to cycle in the mid-day sun, just for the sake of Noel Coward, I suppose! I met a chap there called Frazer, a sergeant in the R.A.F. Photographic Section and previously a Kingsway Kodak wallah. He of course knew Wratten and Emile Lauste, so we had many a long yarn.

As soon as we unshipped at Lagos we hurried our film into cold storage, hoping that the few hours of hot weather wouldn't affect it too much. When I look at my film now and think what it's

been through without tropical packing, it seems a ruddy miracle to me that it works at all. Of course it's very slow now, and with sunshine the result is extremely grey, but at least it's consistently so.

My present film has crossed the Equator at least six times, been in the Western Desert and in Malaya, where it's so humid that one can wipe the moisture off the surface of the film and the operation of loading in a changing bag is certain to make a perfect torrent of sweat run down one's arms on to the film.

Eventually our turn arrived for the Cairo plane. Bordie went off first, I suppose because he was a Captain and I was then still a second loot. About a week later I went, flying across the Belgian Congo. We stayed overnight in airways hostels, sometimes with enormous Africans with very sharp spears guarding our huts against lions.

At Stanleyville we were met, as are all planes, by a deputation of the ladies of Stanleyville, who took us on a sight-seeing tour. We saw the elusive Okapi, Stanley Falls, and domesticated African elephants pulling carts and washing themselves in the Congo.

The hop after there was to Khartoum, where I met Borradaile on his way up to Abyssinia. He had orders to collect my Eyemo so that he could have a reserve camera to his Newman in Abyssinia. So I went off to Cairo cameraless.

Once in Cairo I was given the job of testing out a second-hand Devry combined sound and picture portable camera. I know nothing about sound, but by a stroke of good luck in my boarding house in Cairo was staying Flight-Lieut. Marcus Cooper, ex-chief of sound of Merton Park Studios. We worked together for some time on the camera, and had just got everything taped when orders came to cease operations on it. I was quite impressed with the outfit, and while the results were not M.G.M. they were quite pleasant.

Marcus and I had many talks about mutual friends such as Harry Waxman (where is he now?). The head of the Kodak 35 mm. department in Cairo was the son of Roseman of Kodak's in London. Young Rosie, as we all called him, carried out the very difficult job of pleasing everybody with the usual Kodak efficiency, aided by many cups of Turkish coffee. In Cairo I met some cameramen who knew chaps in London, and Jock Dean. There was a little hunchback French cameraman who had a still of Arthur Crabtree and himself in France hanging in the place of honour on his library wall.

The next Egyptian highlight was the return of Captain Jerry Massey-Collier from Greece. Jerry by some Herculean

feat had carried his two Eyemos all during their last march, and arrived in the Cairo office with them tied together around his neck by the cross-strap of his Sam Browne. He was absolutely exhausted, which will not be surprising to anyone who has carried cameras and dodged dive bombers at the same time.

A few days later I was ordered to Crete, and as my camera had not arrived from England I took one of Jerry's Eyemos and some film and departed for Alexandria, where myself and a party of war correspondents waited for a passage. We would get on a boat and sail off for a few hours, only to turn round and come back to Alexandria. This went on for a fortnight, and what with being on a quarter-of-an-hour's notice and reading of the Hun success it became pretty nerve-racking, especially as towards the end we had unpleasant enquiries from the office as to where were the pictures of the Hun paratroops.

Judging by the condition of the escapees I photographed arriving in Alexandria it seemed that most people had to swim for it to get away from Crete, and as I am not very good at swimming with an Eyemo and a few thousand feet of film, there wouldn't have been any pictures anyway.

After it was all over we returned to Cairo, and I was immediately ordered to Cyprus on the chance that the same thing would happen there. So I went there with only the things I could carry in my pack—I even discarded my camera-case for the sake of lightness and carried the Eyemo on a strap.

Of course nothing happened, and I stayed in Cyprus for three months living on two pair of shorts, which meant some pretty efficient staff-work to get my spare change of clothes cleaned for the next day. Whilst in Cyprus I had the pleasure of meeting Drummond Drury, then a Lieutenant in the Navy. He gave me a first-hand account of his cycle trip across America to Hollywood. Cyprus is one of the few places I have visited in which I should like to live. It's extremely pretty and living is very cheap (brandy costs one English shilling a bottle).

One day a signal came recalling me to Cairo, so I jumped on a Greek steamer bound for Haifa in Palestine and had my first experience of Greek cooking, which is very oily and rather Soho, but nice for a change. Two things handed me a good laugh on this boat—the first was that throughout the entire voyage the Greek skipper had a double-strength gramophone blaring out Greek tunes and made the rather dangerous voyage into a kind of Thames pleasure trip. The other was that when the ship was in America some place discharging calves, the "eyeties" invaded Greece, so the

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\* The author, a Captain in the British Army Film Unit, sent this article describing his travels and adventures filming the War in the Middle and Far East in the form of eight Airgraph ("V...—Mail") letters to "The Cine Technician," official organ of the British Association of Cine-Technicians, by whose courtesy we republish it for American readers.—The Editor.





Left, a Marine Corps Training Film Unit makes a teaching film on "First Aid in the Field." Note use of both 35mm. and 16mm. equipment. (Photos by Staff Sgt. A. W. Rohde, U.S.M.C.) Below, Navy, Marine Corps and R.A.F. student cinematographers receive instruction in the "March of Time" Studios. Upper, making titles and inserts; note use of both 35mm. Mitchell and 16mm. Bell & Howell cameras. Lower, studying "rushes" on 35mm. Akeley viewer. (Photos Frank Calabria, "March of Time.")

## HOW THE NAVY MAKES ITS TRAINING FILMS

By STAFF SGT. ALFRED W. ROHDE, JR., U.S.M.C.

and STAFF SGT. EDWARD R. BUTTERLY, U.S.M.C.R.\*

"MAN all battle stations!" The command resounded throughout the ship, as the fleet swiftly maneuvered into assigned positions. A sense of readiness permeated the very gunwales of the ship and responded in the action of each and every man. Huge 16-inch guns, aimed by precise mathematical minds, reached for the horizon in search of their targets.

Uncle Sam's Bluejackets were at work—not on a problem, nor against an actual enemy, but in every sense, with responsibilities that are equally as important—providing the "set" for movie makers producing a training film.

It is early morning, and under closely-simulated combat conditions, the zero hour rapidly approaches. Khaki-clad Leathernecks, in complete readiness, are preparing to disembark—after the Navy's guns have played havoc with the enemy's beach installations, and "softened" them to a point where the landing party can make the attack.

Air reconnaissance has been going on for some time, and the deadly weapons of the Navy's air support are anxiously awaiting the given signal to "take off." Pre-assigned duties are being carried out in all parts of the various ships so that every detail can be completed in unison. Precise timing is of primary importance in the perfect execution of the attack.

The zero hour approaches, and like a magic military pattern the very walls of the sea begin to open under the fire of the ships' guns, the drone of the planes, and the shouting Leathernecks as they climb down the cargo nets in search of their prey.

Cameras, blazoned like felonious muti-

neers, are mounted at every vantage point, adjusted by the skilled fingers of able photographers, constantly recording the important details which come within the scope of their lenses. Trained eyes and fingers check every minute detail for precision and technical accuracy. They have to be correct—retakes are costly during times like these.

On the shoulders of these men rests the responsibility of creating a graphic, up-to-the-minute library on the science of modern sea warfare, providing a quick, complete method for converting raw recruits into polished seamen. Their object—a film for every problem!

In devising a means to overcome the obstacles encountered in training adequate crews, the Bureau of Navigation delegated to the Training Film Section of the Bureau of Aeronautics complete supervision of the production of training films. The necessity for developing a "super-educator" to teach recruits rapidly, and fully was clearly realized.

To "advance the ball" toward that goal, the training film has become almost invaluable. This is only a small cog in the Navy's huge machine, but it is a vital one.

In producing training films, contracts are made with civilian producers who are required to comply with rigid regulations and closely-whittled schedules, for the finished products must be presented with a minimum loss of time. Fortunately, in accomplishing this end, they do not have to contend with the temperament found on a Hollywood set, for the actors are \$50-a-month seamen, devoid of glamour, and trained to regard every wish as a command.

As a prime factor in maintaining schedules, and getting the job done, the



directors, through the commanding officers of the Navy, receive strict compliance from the men—a compliance that is seldom seen in a "star-happy" Hollywood. There is no pampering, or suggesting, for an officer's word is law in a theatre of well-disciplined soldiers of the sea. Nothing is romantic in the work which they are doing, nothing is spectacular.

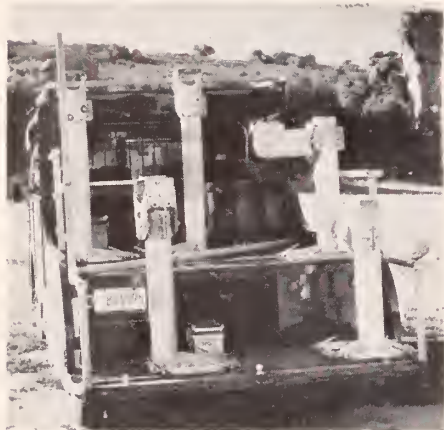
No importance is placed upon entertainment as portrayed on the theatrical screen. The one ambition of these men is to produce a smooth, technically perfect "celluloid school-marm" to assist in making our Navy the foremost and most efficient fighting force in existence.

A completed training film, whether produced by the Navy, Army, or Marine Corps, will display, even to the most critical educator, a patience for detail and the precise development of each point. Oftentimes in a Hollywood film, where entertainment is of primary importance, swift action, a suggestion, and the development of an idea take precedence, with technical accuracy running a close second.

Carelessly-staged action in a training  
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\* Reprinted through the courtesy of "Our Navy" magazine.





## Republic Develops A New Custom-Built Camera Car

By WILTON SCOTT

**T**HE requirements of a satisfactory camera car or "insert car" for motion picture use are not only unusually exacting, but so contradictorily diverse that no strictly stock vehicle can conceivably meet them. To serve as a moving camera platform for making follow-shots of "chase" action on horseback or in speeding motors, the camera car must have acceleration and speed which compare favorably with that of a racer. At the same time, it must have heavy load capacity to be able to carry the weight of several camera outfits, and sometimes sound-recording equipment, booster lights, auxiliary generators, and a production crew often numbering ten or fifteen people as well. The moving shots must be rigidly smooth, so it must have the riding qualities of the proverbial pullman, even on dirt roads or across fields, and when unbalanced by camera-platforms fore and aft or mounted at the side or even atop the cab. It should also be easy to drive, and almost as manoeuvrable as a jeep.

It has always seemed impossible to fulfill all of these requirements in a single vehicle, for to achieve one good quality, sacrifices would have to be made in some or all of the others. Speed and acceleration meant a sacrifice in carrying capacity and "ride;" increasing the load meant a sacrifice in acceleration, and so on.

The conventional method of making a camera car by rebuilding a large passenger car or truck—increasing engine power, altering gear-ratios, and "beefing up" the construction generally—has always left a great deal to be desired, as many a cinematographer can testify.

Therefore when the Republic Studio—probably the industry's largest producer of "Westerns" and action pictures—found themselves in need of a new and better camera car, it was quickly decided that no ordinarily available stock car would do, and that any conventional adaptation of a stock car or truck would be little, if any, better than existing equipment. So Republic's capable Chief Engineer, Charles L. Lootens, was handed the task of designing and building a camera car that would really meet today's needs.

The result is a radically different piece of automotive equipment. Not only does it meet and exceed the specifications the designers set themselves, setting new standards of camera car performance, but it is also easily adaptable to a remarkable variety of other uses, civil and military, outside the motion picture field.

Although designed from the ground up for its specialized service, this car makes a remarkably extensive use of stock automotive parts and assemblies. The frame and body are of course specially designed and built; but the power plant, running gear, and the like are commercially available parts, modified in

some cases, and unconventionally assembled to produce a radically new result.

As will be seen from the illustrations, the car is an unusually compact cab-over-engine type fitted with dual rear axles, each equipped with dual wheels. The power plant is also dual, consisting of two standard Lincoln Zephyr 12-cylinder motors, each of which drives one of the dual rear axles. This twin-motor power plant, it was found, operates more economically than any larger, single unit capable of obtaining comparable performance with the car's loaded weight of more than 16,000 pounds.

A simple mechanical linkage permits shifting gears on both motor-drive systems with a single control. A similar linkage allows the use of a single accelerator for both motors, and a single clutch pedal, working through hydraulic linkage, operates the two clutches in synchronism. The designers found that no direct interconnection between the two motors and drive systems was necessary.

A dual steering control is provided so that when making running-shots the driver can look backward or to the side, concentrating his attention on controlling the speed of the camera car to match that of the horseman or vehicle being filmed, while an assistant steers the car by means of a removable auxiliary steering wheel.

The performance of this dual-motored truck is remarkable. The original speci-

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# Simplifying Script Breakdowns For Training Film Production

By JAMES A. LARSEN, Jr.

**B**REAKING DOWN" a script before shooting, so that all scenes on a given set or location can be planned and photographed together (regardless of their actual relationship in the picture's continuity), and so that such details as actors' calls, costuming, props, preparation of sets, technical facilities, transportation, and the like, can be organized efficiently, is so completely a part of Hollywood studio routine that it is taken as a matter of course. An experienced assistant director or unit manager will break down the script as a natural part of his pre-production staff-work.

But the smaller organizations away from Hollywood, making industrial, educational, and most recently wartime employee-training films, whether in 35mm. or 16mm., do not, as a rule, command the services of skilled production assistants of this type. As a result, they do not always enjoy the benefits of completely efficient pre-production planning. Yet since these producers work on infinitely smaller budgets than Hollywood's theatrical-film producers, and usually with a much narrower margin between profit and loss, they need it even more.

In previous articles, the writer has pointed out some of the more elementary technical decisions which must enter into the pre-production planning, as, for example, whether the subject in hand calls for black-and-white or Kodachrome, reversal-film or negative-positive; whether to use sound in the form of synchronous dialog or narration with or without music and sound-effects; whether to record by single-system or double-system methods, and so on.

But in addition to this—and regardless of the decisions reached as to these technical fundamentals—the training-film producer must further plan which scenes to make on location and which can best be made in the studio. For scenes to be made on location, he must make detailed arrangements in advance for permission to photograph, for availability of power, for transportation, for local 'acting' talent (if needed) and many other details. For scenes to be made in the studio, he must plan to rent, adapt, or design and build suitable sets, and of course to decorate and furnish them, and provide suitable lighting and other facilities.

To facilitate all of this essential pre-production planning, a detailed script of the entire production must be prepared.

SCENE FORM			
TITLE OF PRODUCTION _____		SCENE NUMBER _____	
TYPE OF SCENE: Silent <input type="checkbox"/> Single system <input type="checkbox"/> Double-system <input type="checkbox"/>			
LOCATION INTERIOR <input type="checkbox"/>	} LOCATION: _____	TIME OF SCENE	TIME OF YEAR
LOCATION EXTERIOR <input type="checkbox"/>		MORNING <input type="checkbox"/>	SPRING <input type="checkbox"/>
STUDIO INTERIOR <input type="checkbox"/>	} SET: _____	AFTERNOON <input type="checkbox"/>	SUMMER <input type="checkbox"/>
STUDIO EXTERIOR <input type="checkbox"/>		EVENING <input type="checkbox"/>	FALL <input type="checkbox"/>
		NIGHT <input type="checkbox"/>	WINTER <input type="checkbox"/>
DESCRIPTION OF SCENE: _____			
FIELD OF CAMERA: Long-shot <input type="checkbox"/> Medium-shot <input type="checkbox"/> Close-up <input type="checkbox"/> Insert <input type="checkbox"/> Lens: _____			
CAMERA POSITION Fixed <input type="checkbox"/> Moving <input type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Eye-level <input type="checkbox"/>			
FURNITURE REQUIRED		PROPS REQUIRED	
_____		_____	
_____		_____	
_____		_____	
CHARACTERS REQUIRED		COSTUMES REQUIRED	
1. _____		1. _____	
2. _____		2. _____	
3. _____		3. _____	
4. _____		4. _____	
DESCRIPTION OF ACTION: _____			
_____			
DESCRIPTION OF SOUND: Dialog <input type="checkbox"/> Narration <input type="checkbox"/> Music <input type="checkbox"/> Sound-effects <input type="checkbox"/>			
Pre-Recorded <input type="checkbox"/> _____			
Sync-Recorded <input type="checkbox"/> _____			
Post-Recorded <input type="checkbox"/> _____			
TRANSITIONS:			
IN: Fade-in <input type="checkbox"/>	Wipe in <input type="checkbox"/>	Dissolve in <input type="checkbox"/>	Direct cut <input type="checkbox"/>
OUT: Fade-out <input type="checkbox"/>	Wipe-out <input type="checkbox"/>	Dissolve out <input type="checkbox"/>	Direct cut <input type="checkbox"/>
CONTINUITY: ( <i>Direction of all entrances and exits, action, dialog, etc.</i> )			

In today's employee-training films as in the commercial and classroom films of normal times, it is very decidedly advisable to set forth at the start of the script the objectives which the film has, and the audiences for which it is designed. This may seem unimportant, but a moment's consideration will show that it is not: a film intended to demonstrate an improved technique of welding to an audience of experienced welders, for example, can wholly ignore basic fundamentals which would be essential in a film intended to teach welding to novices.

Then should follow a detailed synopsis of the theme or story of the picture,

followed by the conventional scene-by-scene description of the action and dialog.

Once this point has been reached, the author has found it very convenient to transfer the script to printed scene forms like those reproduced herewith. Each scene form should contain all of the necessary data concerning a single scene, on a single sheet.

The use of these scene forms provides a method by which the script can very easily be broken down, even by comparatively inexperienced assistants, thereby to a considerable extent offsetting the

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## Aces of the Camera XXIII: Charles Lang, A.S.C.

By WALTER BLANCHARD

THE story of how Charles Lang, A.S.C., made his way up the cinematographic ladder to an Academy Award and secure recognition as one of the industry's foremost directors of photography does *not* run true to the form of the usual "success story." True enough, he worked and waited long enough for a chance to photograph a picture as a First Cameraman; but when that opportunity came, he certainly didn't stick to the Alger formula and magically enchant the star with his glamorizing camerawork, and romp off to success from the first day's work.

Quite the reverse! He admits that he flopped on his first picture, and was sent

scurrying back to grinding second camera, very much in the dog-house. He waited years for another chance, and then acquitted himself with so little distinction that he was generally regarded as washed out—until he made a decision which at long last set him on the high road to success.

His story really begins about twenty years ago, when he was an earnest young law student at the University of Southern California. Officially, you know, he's Charles Bryant Lang, Jr.; his father, Charles B. Lang, Sr., was one of the industry's best laboratory experts, and was at that time heading a department in the laboratory of the now-for-

gotten Realart Studio. Charlie, Jr., was a particular pal of Frank Garbutt, Jr., whose father was Realart's head. And Garbutt, Jr., persistently urged Lang, Jr., to forget his law-books and join the rest of the two families in the technical end of Realart's production.

Eventually the younger Lang said yes, and went to work as a helper in Realart's lab, washing tanks and helping mix chemicals by day, and poring over his law-books in night classes, as he wasn't yet completely sure he wanted to trade a legal career for a photographic one.

But in time, that question was settled for him. Successive advancements in his work kept him busier and busier, with increasing responsibilities as he went through increasingly responsible posts in the various departments, until he found his time so fully taken up that he had no more time to study torts and malfeasances.

After a thorough grounding in all phases of laboratory work, he found an opening in camerawork and started in as assistant to H. Kinley Martin, one of Realart's ace cameramen, and a pioneer member of the A.S.C. After passing the usual apprenticeship as an assistant, he finally became what was then called a Second Cameraman.

"In those days," he will tell you, "the Second Cameraman had a very different job from that of today's Second or Operative Cameraman. It was the practice in those days to have two cameras on every shot: one, operated by the First Cameraman, photographed the negative used for domestic prints. The other, operated by the Second Cameraman, stood beside it and made the negative used for foreign prints.

"The Second Cameraman made all the inserts—usually on his own—and very often when there was need for what today we'd call a second unit, or some atmospheric shots, it was the accustomed thing to send the Second Cameraman out to get them, while the First Cameraman carried on with the more important scenes in the studio.

"Then the Realart studio shut down. And I starved. I got Second Camera jobs where I could, and occasionally shot First Camera for independent 'quickies,' for producers whose only idea was to get something on the film for as little money as possible. It was, as I look back on it now, grand training; but it was absolute hell to go through. Most of the time I didn't know where my next day's work was coming from (or when!) and plenty of times I was even more worried as to where I'd pick up my next meal or my next week's rent.

"Finally, though, I managed to get on at the old Lasky studio—one of the fore-runners of today's Paramount—as a fairly regular Second Cameraman. Realart had been a Lasky subsidiary, and I found friends there among the executives, directors and cameramen who had been with Realart.

After a while they gave me a chance to do a picture as a full-fledged First Cameraman. It was about 1926, and the

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# THROUGH the EDITOR'S FINDER

ON another page of this issue will be found the roster of the members of the A.S.C. who are now serving in the Armed Forces of their country. It's not sensationally large, as such lists go, but it's impressive if you consider what's behind it. For the A.S.C. is not a large organization; its membership includes all of the industry's recognized directors of photography—but there aren't so very many of them . . . not more than 150 or 160. And as they're the senior members of the photographic craft, their average age is probably well above the 45-year mark which is the preferred upper limit of the military.

Most of these men didn't really *have* to go. Virtually all of them entered the service by enlistment, and had almost literally to fight to make their way past the restrictions as to age, health and the like, which hedge round the services. They gave up highly-paid civilian jobs in order to serve their country in the work they know best. And many of them were in uniform months and even years before Pearl Harbor.

They didn't ask for soft, desk jobs, or spectacular, swashbuckling ones, either. All they wanted was work—work making whatever type of motion pictures would be most helpful to the War Effort—work in which their rare and hard-earned “know how” would be invaluable.

We don't know where all of them are, or what they're doing. Some of them, we know, are scattered among the combat zones all the way from New Guinea to Iceland and England. Others, from their experience and qualifications are, we suspect in North Africa and Russia. Yet others are still at home, working against all sorts of obstacles, to turn out training films to make our growing Army, Navy and Air Force still more efficient.

But wherever they are, and whatever they are doing, we're proud of them!

FEATURE films built up from several more or less connected episodes are very much the style of late. On one of them, now in production, an interesting incident recently happened. The director of photography, on loan from another studio, who filmed the first episode, was recalled by his studio for another assignment, and another cinematographer took the film at the start of the first episode. This incident gives rise to a most intriguing speculation—probably impractical in many ways, but none the less interesting for all that. We talk a great deal about the individualized styles of our various leading directors of photography: wouldn't it be interesting, therefore, to see five or six of them displayed in a single picture, with each cinematographer given a chance to treat one episode of such a film as he saw fit?

THE other day we were talking to an officer of one of the military photographic units. He remarked that some of his superiors, who weren't familiar with Hollywood's motion picture production, had difficulty understanding how directors of photography—often without formal college education—could be considered as officer material. “They're afraid, too,” he said, “that the years of studio experience have given them the so-called ‘Hollywood touch’ in its worst sense—an urge for questionable showmanship and publicity which are out of place in making serious combat or training films.”

Somehow, we wish we could give these officials a chance to watch the average director of photography at his daily work. We've an idea their reaction would be like that of a noted automotive engineer we once took through a major studio. At every turn he'd run into some new piece of equipment—a camera-boom or the like—and exclaim, “Why, dammit, that's good, sound engineering. I didn't think you had any brains like that in Hollywood!” Yet the brain which conceived most of those examples of good, sound engineering had left high-school for a job in the old Edison studio nearly forty years ago. But he had substituted for the engineering degrees he didn't have, more than four decades of practical, commonsense “know how” which can only be obtained at the college of cinematic experience.

Today's average director of photography is like that, though he probably hasn't been photographing pictures quite so long. He is a unique combination of creative artist, painstaking technician, and well-balanced executive. In charge of photographing modern major productions, he is actually an executive charged with the responsibility of seeing to it that from \$6,000,000 to \$8,000,000 of his firm's money reaches the screen in saleable form each year. He has constantly to make decisions between ideas and treatments which may be desirable, and those which, if less sensational, are more practical when weighed against the factors of production time, effort and workability. All too often it is an unmentioned but tacitly acknowledged part of the cinematographer's job to keep the feet of the director, writers and others on the ground of production practicality. That's why producers feel confident (as they'll admit in off-the-record conversations with their cameramen) that they can make a director out of anybody—as long as he's backed up by an experienced cinematographer who can keep the inexperienced newcomer from making costly blunders.

In all of this, the cinematographer's greatest asset is his vast fund of experience in making pictures—experience which can be gained only through years

of practical work. No school or college exists which can teach it, for it is something in which technical theory and actual practice are often at variance. A good analogy might be found in Naval gunnery which, they say, while it's a highly technical science, is also something in which practical experience provides something that can't be learned in classrooms. The man with all the theory at his fingertips often can't hit the target as well or as often as the practical man with perhaps less mathematics but more of an experienced “feel” for gunnery. Cinematography is like that, too; and the only way to get that invaluable “know how” is by actually making pictures, year in and year out, under every imaginable condition.

A FEW weeks ago we saw a picture in which the star went through most of her part playing an adolescent, with little or no make-up, and only turned on the mature glamor in the last few sequences. This particular star, while a fine actress, has always been something of a problem child so far as cinematographers were concerned, for she had her own ideas on make-up (or its absence) and flatly refused to listen to well-meant advice from the men who photographed her.

But in this picture, an equally independent and plain-spoken cameraman forced her, probably against her will, to wear a proper make-up in the scenes where she was supposed to look glamorous. The result was amazing: for picture after picture she had consistently appeared with a photographically dirty face, which seriously handicapped her acting efforts. Now, for the first time, she appeared as the charming young lady she actually is. For the first time, she had given the man at the camera a chance to give her good photography, rather than makeshift lightings which could never completely erase the effects of bad make-up.

A short time later, we saw her next picture. Evidently she had taken the lesson to heart, for her make-up was good, and the director of photography had a real chance to give her a glamorous screen appearance.

There are all too many of our top players—men as well as women—who need a similar lesson. We wish they could be persuaded to take the trouble to study these two pictures, and see for themselves the difference that good make-up makes, or let a cinematographer make a simple, comparative test to show them that working with no make-up, where make-up is really needed, or working with an unsuitable one, is not art, but simply a hindrance to both cinematographer and player.



# A.S.C. on Parade

We happened in on an impromptu banquet at Paramount's camera table the other day. Joining a group including Camera Chief Roy Hunter, DuPont's Simeon Aller and Pete Shamray, Charlie Lang, A.S.C., Ted Sparkuhl, A.S.C., Dan Fapp, A.S.C., and Navy Lieutenant Al Gilks, A.S.C., we were amazed when the waitress unexpectedly brought in a huge platter laden with some of the finest venison we've ever tasted. The venison, it turned out, was a gift to the Paramount camera gang from Archie Stout, A.S.C., whom Al had visited at Archie's tungsten mine in the High Sierras. Archie, you know, has amazed himself there "for duration," digging tungsten from his mine to help the War Effort. A cheery letter from him tells us he's with us in spirit, though, if not in the flesh. "Operating a tungsten mine is no picnic," he writes. "I think a Director of Photography has a cinch by comparison—even if the Director is a louse, the Producer an inhuman ogre, and the Star is impossible to photograph. Just try breaking ice every morning to wash your face for breakfast . . . and try eating cold fried eggs (without bacon) for breakfast when you do!" Yep, Archie, our hat is off to you, and we'll be looking forward to seeing you when the mine gets snowed in for the winter!

Joseph Valentine, A.S.C., off to Washington and points unknown as First Lieutenant Valentine of the Army's Signal Corps.

Floyd Crosby, A.S.C., probably America's top filmer of documentary pictures ("The River," "Power and the Land," "Fight for Life," etc.), is also away and in uniform as an officer of the Army Air Force.

Rudy Maté, A.S.C., is another member going the military route. Expecting his Signal Corps Commission to come from Washington any day, he's resigned from the A.S.C. Board of Governors, on which he will be replaced by Joe MacDonald, A.S.C.

And we understand Peverell Marley, A.S.C., is now Sgt. Marley of the Air Force, and in line for Officer's Training.

Universal's been keeping John W. Boyle, A.S.C., so busy on production that he, too, has retired from the Board, yielding his seat to Ted Tetzlaff, A.S.C.—or should we say Theodore, the way his screen credit has been reading lately?

Greetings to five new members of the A.S.C.—Robert C. Bruce, A.S.C., Mark Davis, A.S.C., Stanley Horsley, A.S.C., Fred Mandl, A.S.C., and Robert L. Surtees, A.S.C. And at the same time, a good-bye salute to Mandl, who has enlisted in the Signal Corps.

And congratulations to Harry Wild, A.S.C., too, on his term contract with producer Sol Lesser. Harry's first picture will be "Stage Door Canteen," chock-full of celebrities of stage and screen. We'd like to spare an orchid to Lesser's publicity-man, also, for the acumen he showed in including Harry's name in that series of trade-paper ads plugging the all-star talent on the pic.

Charles G. Clarke, A.S.C., gets his first crack at a Technicolor feature with assignment to "Hello, Frisco, Hello" for 20th Century-Fox. Allen Davey, A.S.C., is his Technicolor collaborator.

Dan Fapp, A.S.C., got a surprise the other day when he came in to the A.S.C. office to pay his dues. Seems his wife had paid 'em the day before!

Jackson J. Rose, A.S.C., beaming over the critical raves about his photography of MGM's "Northwest Rangers," gets the assignment to photograph "Fighting Men," a War Department Training Film, also at MGM.

Nice to see Alvin Wyckoff, A.S.C., busy at 20th Century-Fox.

Charles Lang, A.S.C., going around the Paramount lot with a furrowed forehead. He's been assigned to photograph "So Proudly We Hail," which presents the problem of balancing wartime realism with the task of keeping three of the industry's top glamour-girls looking glamorous as Bataan nurses.

Note to those who might be worried over an item last month that Phil Tannura, A.S.C., had borrowed our pet Craig viewer to edit some of his personal 16mm.: he not only borrowed it, but brought it back! Considering the scarcity of the things, that puts him in line for our own V. C.—Very Conscientious!

Roy Hunt, A.S.C., draws the assignment to RKO's "I Walked with a Zombie." Incidentally, now that gas rationing is here, wonder if Roy will replace the steam engine in that wonderful supercar he built—? It can burn kerosene, fuel oil or hair-tonic, you know!

Ray Binger, A.S.C., between special-effects chores for Sam Goldwyn, directs the photography of an Army Training Film on "Administration of Military Justice and Courts Martial."

If you heard fragments of tattered English floating around Lakeside the other day it was Tony Gandio, A.S.C., expressing his sentiments on missing nine two-foot putts in succession!

Add John Fulton, A.S.C., to the list of motorbike riders. He putt-putted out

of the Universal studio the other day just as we drove in . . . we didn't see him, though, 'cause we were looking for his big Cord.

James Wong Howe, A.S.C., free-lancing now that his Warner contract is through, gets the assignment to "Never Surrender," for Arnold Pressburger at United Artists.

Congratulations to Nick Musuraca, A.S.C., on the birth of a daughter, Anna Marie.

Now that David Selznick has definitely turned over most of his production assets to 20th Century-Fox, we understand Stanley Cortez, A.S.C., and George Barnes, A.S.C., will move out to Westwood, too. They're certainly assets in any man's studio.

A surprise visitor the other evening was Gordon Pollock, A.S.C., just back from the East where he demonstrated some of his photographic inventions to Army big-wigs.

Another pleasant surprise was seeing Leon Shamroy, A.S.C., at November's A.S.C. Technical Meeting.

Memo to Karl Struss, A.S.C.: those stills we shot the other day during our discussion of incident vs. reflected-light meters are ready for you any time you want to come up and see who won!

Thanks to L. Wm. O'Connell, A.S.C., for the nice talk he gave at the last Technical meeting on shooting 16mm. for blow-ups. And thanks to Johnny Boyle, A.S.C., too, for the loan of his sound projector for the same meeting.

Jerry Ash, A.S.C., tells this one about the "good old days" at the old Universal. Seems the Stern brothers, pioneer comedy producers, were deeply concerned over a competitor, Henry (Pathe) Lehrman, and sent a scout to catch the latter's first picture. The scout reported there was nothing to worry about—that Stern's comedies were every bit as good. "Don't tell me," erupted Abe Stern, "that they're as bad as all that!"

They say George Meehan, A.S.C., did a super-spectacular job on the Technicolor "Desperados" for Columbia. We're looking forward to seeing it!

Frank Redman, A.S.C., assigned to film "This Land is Mine" for RKO.

Marcel le Picard, A.S.C., films PRC's "The Lady from Chungking."

And Jack Greenhalgh, A.S.C., is in charge of the cameras on the untitled first of PRC's new "Billy the Kid" Western series.



# PHOTOGRAPHY OF THE MONTH

## GENTLEMAN JIM

Warner Bros.' Production.

Director of Photography: Sid Hickox, A.S.C.

The life story of a prizefighter—even if produced on an "A-picture" budget—isn't the sort of thing you'd ordinarily expect to see treated as an example of fine dramatic cinematography. But Sid Hickox, A.S.C., has made "Gentleman Jim" precisely that. Even in the fast-moving fight scenes he has maintained photographic values very much better than you usually see in "action" pictures; and in the rest of the picture he has taken advantage of every possible opportunity of mood and locale to make the film one of the most satisfyingly photographed pictures we've seen of late.

The "gay 90's" setting helps this a great deal. So, too, does the fact that many of the fights shown occurred at a period when prizefighting was illegal, and were accordingly staged surreptitiously at night in hidden arenas, on barges, and so on. In these scenes Hickox' effect-lightings do a great deal to establish the mood of the action. His treatment of the scenes in the opulent Olympic Club furnish an excellent dramatic contrast, and again his camera-treatment aids greatly in outting over the dramatic effect.

The prize-fight sequences are of course the highlights of the picture, and they certainly rate praise for an unusually efficient operative crew. They are some of the best examples of fine operative camerawork we've seen in some time.

The several interesting montages are credited to Don Siegel and James Leicester. They're more than ordinarily effective.

## THE BLACK SWAN

Twentieth Century-Fox Production (Technicolor).

Director of Photography: Leon Shamroy, A.S.C.

Leon Shamroy, A.S.C., very decidedly goes to town with this richly-Technicolored pirate story. Indeed, after seeing "The Black Swan" it's hard to think of a pirate story in monochrome.

Shamroy paints his picture in broad, vivid strokes, as becomes a story in which colorful settings and colorful costumes and action combine so vividly. Yet on analysis, you'll notice that much of the color is actually subdued, toned down either in the actual set or costume, or toned down by Shamroy's careful use of strong effect-lightings, so that while you get an overall impression of strong color, you get it actually without being chromatically surfeited.

This reviewer particularly liked Shamroy's use of vigorous effect-lightings, even though some of them seemed skating a bit close to the danger-line of extreme low-key lighting. This treatment, too, made possible the use of many very

striking portrait-lightings in the closer shots of the principals. Indeed, your strongest after-recollection of "The Black Swan" is of some of the effect-lighted close-ups of Tyrone Power and Maureen O'Hara.

## JOURNEY FOR MARGARET

Metro-Goldwyn-Mayer Production.

Director of Photography: Ray June, A.S.C.

"Journey for Margaret" is another picture produced on a typical Director W. S. Van Dyke "hurry-up" schedule. It was done quickly—but thanks to Ray June, A.S.C., it doesn't give that impression on the screen. It certainly isn't the best work Ray June has done, but his sure artistry gives the picture a visual smoothness it wouldn't have had in less capable hands.

The story is laid largely in London at the time of the blitz, and affords a wide range of dramatic moods and settings, ranging from highly dramatic scenes in air-raid shelters, bombed homes and hospitals to smoothly luxurious scenes in the hotel and in peaceful America. Following all these divergent moods, June gives a truly facile camera-performance. And his treatment of the players under all these varying circumstances is, as usual, flawless.

The process scenes are particularly effective, many of them using as backgrounds news shots made actually during the blitz.

Dramatically, even in the hands of a director not inherently suited to a story of this type, "Journey for Margaret" is worth seeing. Without attempting to point a moral, it contains a stirring preachment on why we're in this war, and why we must win it.

## ONCE UPON A HONEYMOON

RKO Production.

Director of Photography: George Barnes, A.S.C.

Special Effects by Vernon L. Walker, A.S.C.

You may or may not like the story of this picture: most of the reviewers seem to, even though this particular one didn't. But photographically it's well up to the standards you expect from George Barnes, A.S.C.

It couldn't have been a particularly easy picture to photograph, for it's full of abrupt changes of both locale and mood. There's drama, played in high-key, luxurious settings, and comedy played in semi effect-lightings and against an essentially tragic background. Barnes has done smoother jobs—but none which more completely showed his versatility and his mastery of his medium.

His treatment of the players is generally good. As a matter of fact, we haven't seen Ginger Rogers so effectively photographed in a long time. Some of it is, no doubt, due to the fact that for the

first time in many years she appears to have been persuaded to wear a really good make-up; but much of the credit surely belongs to Barnes' skill, too. On the other hand, we were rather disappointed in Cary Grant's appearance, as we have been in several of this star's more recent pictures. What we saw on the screen gives us to suspect he is either wearing much too dark a make-up, or none at all. In neither case does he give the cinematographer a chance.

Vernon Walker's special-effects work is, as usual, excellent, especially in the scenes in bomb-ravaged Warsaw and in the Paris cafe. The concluding miniature, however, should not be held against him, for while it is certainly not up to the Walker standard, the action was planned and played for a laugh, and could probably not have been handled any other way.

**SOUTH AMERICAN NOTE:** During the last several months we have carried a number of articles dealing with the use of 16mm. Kodachrome enlarged to Technicolor for theatrical release. Our Latin-American readers will, we are sure, be interested to know that a major example of this is playing in their theatres now, in Walt Disney's "Saludo Amigos!" All of the "live-action" scenes of this production were photographed in 16mm.—largely by Walt himself—and enlarged to 35mm. for use in the picture. While we have not been privileged to see the entire production, we have seen some of it, and we feel sure our readers in Latin-America will be interested in seeing what can be accomplished by this new development in cinematography.

## WAKE ISLAND

Paramount Production.

Directors of Photography: Theodor Sparkuhl, A.S.C., and William Mellor, A.S.C.

Aerial Photography: Elmer G. Dyer, A.S.C., and W. Wallace Kelley, A.S.C. Second Unit Photography: Harry Hallenberger, A.S.C.

Special Photographic Effects: Gordon Jennings, A.S.C.

Process Photography: Farciot Edouart, A.S.C.

"Wake Island" is a picture everyone should see, not alone because it is timely, and chronicles one of the most heroic episodes in American history, but because it is a picture that's likely to have a lasting influence on the photographic trends of the next few years. The multiple-threat team of cinematographers who brought it to the screen have given it the severely realistic visual treatment of a documentary—but with a difference. The picture has been carefully planned so that when the dramatic moments arise, they are enacted under conditions which permit a visually dramatic camera-treatment without in any way lessening the essential feeling of realism.





With fast films, ordinary house-lighting Mazdas in room lights and photographic units can take the place of Photofloods.

## Lighting Without Photofloods

By WILLIAM STULL, A.S.C.

**P**HOTOFLOODS are gone "for duration!" At least they are so far as Mr. and Mrs. Average Amateur are concerned, for beyond present dealers' stocks they're reserved for Military, for Defense Plants, and for snooty civilians with priorities. The mainstay of interior home moviemaking has marched off to war!

Don't take this to mean, though, that interior cinefilming is also eliminated "for duration." Long before the versatile Photoflood was born, pioneer home movie-makers were filming interiors under artificial light, and doing quite well, thank you. Today, we can do what they did—and do it much better because we've better materials to do it with.

When the W.P.B. "froze" Photofloods and ordered the manufacture of many other types of lamps discontinued, they were really much kinder to photographers than they might have been. For they left unrestricted at least three types of lamps which can be extremely useful photographically.

First of these are the standard Mazda lamps used in ordinary household lighting, and including some which while still low-priced, and small enough to be used in many types of photographic lighting units, are *almost* as powerful as a Photoflood.

Second are the "R-type" spot and flood lamps which, with their built-in silvered reflector bowls, can be used alone, without the usual photographic reflector units.

Third are projection lamps, including several types with screwtype bases which will fit any standard lamp-socket.

Now we might as well admit at the start that all of these substitute lamps have a common drawback insofar as the Kodachrome enthusiast is concerned: they burn at a lower color temperature than Photofloods, and their light is much redder. But this can be corrected by means of compensating filters which several manufacturers supply. Even though the use of a filter for indoor Kodachroming means a loss of speed,

it's certainly better than not being able to shoot at all. And of course for black-and-white, the color temperature factor hardly matters.

As a matter of fact, shooting in black-and-white on today's fastest 16mm. and 8mm. reversal films like Eastman's Super-XX and Agfa's Triple-S Pan, which have Weston ratings of around 80 to incandescent light, many of us have found the usual Photoflood illumination too intense. Often in making close-ups lit with one or two No. 2 Photofloods which, with the slower, pre-Super-XX types of film I would have been working with my lens at  $f:2.5$  to  $f:1.9$ , with the faster film I've had to stop down to  $f:4$  to  $f:6.3$  or even smaller. In some tests I've gotten very satisfactory exposures using only the light coming from a three-globe table lamp—a total of less than 200 Watts—and of course using my lens wide open.

This plays right into your hand now that you can't get Photofloods. Using these fast films, we can shoot surprisingly good interior scenes by merely putting 100-Watt globes into the normal shaded reading and stand lamps in a room, and perhaps using slightly larger globes—200 to 300-Watt Mazdas—in some of our photographic units for modelling lighting.

These higher-powered house-lighting bulbs are usually a bit larger than the familiar Photofloods, so they won't in every case fit the reflector you've been using Photofloods in. The largest of these globes equipped with a standard medium screw base—the 300-Watt "300M" globe—is about the size of a No. 4 Photoflood, slightly less than  $\frac{2}{3}$  as much light as the familiar No. 1 Photoflood. It costs about twice as much as a No. 1 Photoflood: but its rated burning life is some 750 hours as compared to the Photoflood's three!

The projection globes, speaking generally, are more compact. The 500-Watt screw-based projection globe which General Electric lists as "500T20" is a tubular-shaped bulb about a quarter of an inch longer than the No. 2 Photoflood, but a trifle slimmer, and is likely to fit into most reflectors in which you'd normally use a No. 2, though sometimes a 10c socket extension may be needed. It delivers about  $\frac{2}{3}$  as much light as the No. 2, and is a good bit more expensive; but again there's an offsetting saving in that its burning life is almost ten times that of a No. 2 Photoflood.

Using these lamps, you'll find a definite advantage over Photofloods in the wider range of lighting effects they can produce. From the professional cinematographer's viewpoint, the Photoflood was open to criticism because it was available *only* as an inside-frosted bulb, which gives a somewhat diffused, soft light. The professional cinematographer prefers his lamps in clear bulbs which, when used "raw," give a much "harder,"

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THE secret of getting convincing miniatures with substandard cameras lies in making sure the miniature is not *too small*. One of the basic rules of miniature work is that, generally speaking, the smaller the scale to which your miniature is built, the faster your camera will have to operate to produce an illusion of normal size on the screen. Very few substandard cameras will operate much faster than 64 frames per second: therefore miniatures to be photographed with them should certainly never be built to a scale smaller than one-half inch to the foot; one inch to the foot is preferable, and even larger-scale miniatures are desirable if you can get them.

This is especially true of miniatures in which you burn down buildings. Unless the miniature is built to a fairly large scale, the flames will be bigger than the buildings. And as they're small in actuality, even 64-frame speed won't slow them down enough to keep them from looking phoney on the screen. That combination of oversize flames that flicker too quickly will show up your scene as a miniature no matter how carefully you build and photograph it.

Not long ago I saw an amateur-made Civil Defense film which proved this point beautifully. There was a sequence in which a house burned down, ostensibly from an incendiary bomb. The house and its setting were beautifully made to scale; but when the fire started, the flames burst out quickly and went three or four times as high as the house! In real life, you'd judge them to be from four to six stories high; but they flickered so fast on the screen you knew the scene couldn't be anything but a miniature.

We learned later that the picture had been made on an extremely slim budget, and it had only been possible to build the miniature to a scale of 1/16th inch to the foot. Thus, supposing in reality the two-story house shown would have been about 20 feet high, the miniature would only be about an inch and a quarter high. No wonder the flames were too big—though they were really only three or four inches tall!

But suppose that house had been built to a scale of one inch to the foot. The same four-inch flames would, in comparison, appear to be five feet high, instead of sixty. And a rate of movement which is absurdly fast in a sixty-foot flame would be quite natural in a five-foot one.

How you build your miniature will depend largely upon how you want to handle your fire from a picture viewpoint. In making fires for studio productions, sometimes we may want to burn the building completely down, all in one take, and sometimes we may want to keep it burning for days at a time, while we get a variety of different camera-angles of the fire and its details.

Where we want to burn the building completely down, more or less at one take, we simply build a fairly com-

# Staging Miniature Fires For Amateur Defense Films

By JOHN P. FULTON, A.S.C.

plete building out of wood to the desired scale—usually at least one inch to the foot, and sometimes an inch and a half or two inches. Soft pine is probably as good a material as any for this, as it works easily and burns well.

But where we want to burn the miniature more slowly, while we get a large variety of angles on it, we use a different construction. The parts we don't want to burn are made of plaster, carefully cast or molded into the desired shape. The parts we want to burn are made of wood, and often we'll make several duplicate sets of each, so that we can make several takes of each bit of action.

This way, we'll burn out a piece and then when the scene is shot, extinguish the flame with a water spray, remove the burnt section, replace it with a fresh one, and go on again.

I remember in one picture we made not so long ago—I think it was one of our horror pictures, where we burned our monster and a few assorted villains in an old castle—we wanted plenty of close-up angles, even to close-ups of the shingles on the roof as they curled, caught fire and burned. We made a complete miniature roof-panel—shingles and all—of wood, and burned it. The result on the screen was perfect.

Where we want to show a wall collapsing into the flames, we simply make a regular section of the wall in miniature, and carefully weaken it at just the points where we want it to give way. Then at the appropriate time, we can pull it in the right direction with a piano-wire, so fine it is invisible to the camera.

Oddly enough, while bona fide fires in real life start and burn much too quickly to suit us, photographic fires—whether full-scale or miniature—usually need both encouragement and direction.

The best accelerator I've found for this purpose is a combination of gasoline and kerosene sprayed where we want the fire to burn. Gasoline alone gives an actually vicious blaze, but not one that is particularly photogenic. Gasoline alone burns too fast, too, so that the fire is over almost before it is really started. The admixture of kerosene gives body to the flames, and also has more "staying power." The kerosene seems to adhere to the surface of your miniature (as you probably know already if you've used kerosene to start a grate or campfire) so that you get a very fine blaze apparently burning

vigorously—but you can still extinguish it handily with water, re-spray with your gasoline-kerosene mixture, and make another take immediately.

Where the spot you want to burn is easily accessible, an ordinary hand-spray like a Flit-gun will do adequately. But for really professional use, a larger garden sprayer like the "Hudson" garden sprays will prove ideal. That's what we use at the studio. You can run a line of piping into your miniature set, concealing spray nozzles where they'll do the most good, pour the gas-kerosene mixture into the tank, work up whatever pressure you need with the hand-pump, and then, when you turn the valve, you get the spray just where you want it, and at just the strength you want.

The nozzles have to be concealed from the camera, of course, and for the best results they should usually play against some sort of a baffle so that the blaze from the spray is reflected back through the window, door, or whatever it may be, to give the camera the right illusion. On large miniature fires—like that one at the start of "Saboteur"—I've sometimes used six, eight or a dozen rows of these nozzles sunk in the floor. With separate controls, you can turn each row on individually, and make your fire spread precisely according to directions, as once you've got the first line of nozzles started, the others can be placed so they'll overlap enough so that each row will catch from the one before it.

It isn't a very good idea to try and light these gasoline-kerosene fires by hand. When they start, they do it right now, and your assistant may not have time to get out of the way safely. Besides, even in a large-scale miniature set, your fire is likely to be almost over before your assistant has gotten out of camera range! We usually start our fires by a squib fired by remote control through an electric detonator. That way, we can be sure the fire will start precisely where and when we want it to, and that we'll be able to have the cameras turning from the first flicker.

Sometimes you may want to get the peculiar effect of a petroleum fire, with a lot of heavy, oily black smoke billowing up, with flashes of reddish flame licking out of the smoke now and then, like the newsreel shots you've seen of the fuel tanks burning at Pearl Harbor and Midway. To get this effect, put

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# CAMERA PIONEERING ALONG "AMERICA'S BURMA ROAD"

By GEORGE BLAISDELL

she herself shares—and then Mrs. Never-miss sallies forth into the stream again. Successfully she repeats the operation.

A grizzly bear, as a matter of fact a quintet of grizzly bears . . . one by one the whole five of them, are motivated perhaps by curiosity to line up in front of a photographer. He is all set up, with camera on tripod, waiting for them. He has seen them at a distance, and has made preparations against the rather remote possibility there should be opportunity to grab a distant shot, when suddenly the quintet with military precision right-angles in his direction.

As the bears come within photographic range the camera turns—and continues to turn. Grimly the photographer ponders his course of action. The bears continue to advance until they are a scant thirty-five feet away. The camera still continues to turn, but the cameraman's predicament is unsolved.

True, there is a rifle in his impedimenta, but it is not by his hand. If it had been it would have been used only as a last resort. When the tense situation looks darkest, the larger grizzly, apparently the leader, resolves the cameraman's difficulties when he abruptly turns and followed by the others retires from the scene. The bears appear to be satisfied with their inspection. Certainly our cameraman is! For him although it has been a short it has been a rough experience. But he has it all on the film.

The foregoing events are but bits in a screened record of 1900 feet of Kodachrome film shown to the highly entertained Hollywood Women's Club on October 27 by Mr. and Mrs. Alfred Milotte. The latter was at the projector, while the former lectured as the scenes were revealed on the screen.

For five years the Milottes had conducted a photographer's shop in Ketchikan, Alaska. The increasing interest in the proposed—now in operation—Alaskan International Highway, or the present Alcan Highway, caused them to fulfill a strong desire which for a long time had haunted them:

To take a trip of undetermined but necessary length to record on film the country through which such a highway would pass, to show the country that in time to come—not so far removed, perhaps—that would be sought out by uncounted millions for a permanent home.

Accordingly the photographic establishment was disposed of and the Milottes took to the wilds. For photographic equipment they packed a Bell & Howell 121, a Cine-Kodak Special and two

Leicas. For lenses there were a 6-inch telephoto, a 2½-inch, a wide angle and a standard 1-inch. With the Leica they used a 35mm., a 50mm., and a 105mm. lens.

The pictures resulting from the trip were exposed in the course of two years of time, in all seasons. The travelers were naturally deprived of the services of a darkroom on the trail, and learned to do their loading at the end of the day in the semi-darkness when possible.

Early they learned the advantages of having three rather than two persons in a party. These were due to the added work thrown on two persons at the end of the day, with the horses requiring care and the necessities of securing firewood and making camp. Many things can't be well done after darkness sets in.

"One occasion there was work to be done, work that could not wait, and there was a rare sunset, which as everyone well knows, also would not wait," remarked Mrs. Milotte. "At another time we were on the trail of some moose which we were anxious to grab while daylight remained and we were afraid they would get a scent of the horses and we would lose everything."

The speaker told of the trouble frequently encountered in extremely cold weather, when they were forced to slow down on camera speed. "And please remember," she added, "that when you get away from the seashore the thermometer does go low in Alaska. I think it will

**B**ATTLING with a desperate fifty-pound salmon as it swishes wildly about fast-falling, tumbling waters of a rocky mountain stream an Alaskan fisherman struggles to retain his precarious footing amid surrounding boulders as he tries to shorten his line and bring to book his fighting antagonist. It is a truly sporting event, one worthy of any human being's money. It is a grave question as to the winner—the solid and robust fisherman, swaying this way and that, or the fighting fish, one-quarter his weight, pulling and dragging to win release from this unaccountable restraint to his hitherto inviolate freedom.

But a few minutes later there is thrown on the screen another mountain stream, of greater volume and rapidity and downward slope than possessed by the great brook on which we have just gazed. Flying up-stream, some of them above the surface and in plain view to the man out front—in this case we should say the woman—were salmon, enough of them for at least one to be always in view.

They were flying high and handsome, how far in some cases this reporter, (having at least a slight regard for his reputation for veracity!) declines to state in terms of precise linear feet.

From the heavily shaded shore there emerge into the open a big black mother bear and her not too small cub. The two amble down to the water and calmly survey the charming scene. The mother bestows just a glance on the cub, who closely follows her movements.

The mother nonchalantly strolls into the stream, her great bulk immune to the force of the water. Without more than an instant's delay she shoves her nose under the waves and brings up in her teeth a fighting, twenty-inch-long salmon. Back to the shelf on the shore she waddles. There she proceeds to tear it into proper bits for the benefit of her offspring—with which impromptu meal



Mrs. Grizzly goes fishing! (Photo Joseph Yolo.)





Mr. and Mrs. Milotte and the Cine-Special. On opposite page, Mr. Milotte in winter woollens and whiskers.

be agreed that 50 degrees below is not unusual in many places.

"Then again when you want a picture you don't always have time to bring Eastman heat pads into use. It has been our experience, too, that the proper time to get a picture is when it is presented to you. We have passed up many shots—to our sorrow—because we thought we could get them some other time. But those we banked on to get at another time never showed up."

For practically a year now Mr. Milotte has been employed at the plant of the North American Aircraft Company. As a matter of fact it was just following Pearl Harbor his service began. His work there is as visual aid coordinator in the education section. Induction slide-films and teaching motion pictures are prepared under this supervision. His 35mm. color slide-films have been adopted by the Los Angeles visual education department. Strip films in color, with the participation lesson plan, are being developed from this material.

Mr. Milotte's experience in this field has been well rounded. Many of his Alaskan pictorial studies have been hung in national salons. His preparation for the work included study of art at the University of Washington, Cornish Art School, Chicago Art Institute and the Chicago Academy of Fine Arts.

One of the important objects in the Milottes' plans for their trip was to secure substantially complete and representative pictures of animal life in Alaska. They aimed not to record them chronologically, so to speak, covering the country as it might be revealed to them in the course of their travels. Rather it was to group them so far as practical.

Among the animal pictures they went after and secured were marmot (whistling), caribou, wolf, mountain sheep, grizzly bear, black bear, deer, moose, fox and ground and tree squirrel. Of birds there were swallow, ptarmigan, wheatear, arctic tern, jaeger and duck.

Mr. Milotte so far as known is the first official tourist to be given permission in Alaska to carry a gun. It may be said in explanation that permits to enter the country are issued to two divisions of activity: to hunter and to tourist. To the hunter as a matter of course it may be said permission is given to carry arms, but he cannot take a camera. To a tourist goes permission to carry a camera. In Mr. Milotte's case the par-

ticular government authority insisted for his own protection he carry a weapon.

Also it was their policy to keep in front of them two things. First and principally, the main object should be entertainment. Second, it should be to obtain a general, a representative, view of the country as a whole, rather than merely to follow the line of the highway.

For instance, early it dawned on them that sunsets, superb, gorgeous sunsets such as perhaps only may be obtained in Alaska, could be had literally by the barrel. They realized they were faced with the problem of overdoing them.

As an example of the "crowded" condition of the country they noted at one stage of their travels that in ten consecutive days there was but one of these on which they encountered a human being. The fifth day was remembered as the outstanding one on which they met an Indian.

In the course of the entire trip, a matter of perhaps 1600 miles in all, about 400 miles were by horseback, although other means of transportation were by truck, dog-team, and in one case in crossing a river in a rubber kyak. This craft was 17½ feet in length, and as a means of going places rates high in the estimation of the Milottes.

A total of 5000 feet of film was exposed by the tourists. It came sealed in cans and was checked in at customs. Likewise, it had to be accounted for in checking out. Consequently it was decided to check out at Ketchikan, as its destination was Rochester. That avoided dealing with any country other than the United States.

Mr. Milotte was asked if he had any suggestion for those who might contemplate a trip to Alaska in the days to come.

"Yes," he replied. "Perhaps I have. In the matter of clothes, don't carry old clothes. You know it is natural perhaps for one to take along a lot of old duds—duds that have seen their best wear. But you must remember you are going to be out of touch with civilization, and you can't buy what you want when you want it. Take plenty of woolen stockings and warm woolen clothing, because if you are wise you will wear all wool.

"You may not realize it, but Alaska has real precipitation—from 150 to 190 inches annually. In Los Angeles we are not doing so badly if we get 15 inches. We do, to be sure, get more at times, but that really is 'unusual.' Not all of Alaska's precipitation is wintertime snow, either; plenty of it comes down as rain to inhibit the camera-toting visitor. There are many places where you can expect it to rain some part of almost every day, and often continuously for days at a time."

Mr. Milotte was asked what he did with his tripod while en route from here to there. "Do you stow it on the pack animal?"

"Nay, nay," was the prompt response. "It is right over my shoulder. When I want it sometimes I may be in a hurry!"

Mr. Milotte was complimented on his



Top: Filming unloading of a dog-sled. Center: An Alaskan metropolis; the building on stilts is a cache for keeping food supplies from predatory beasts. Bottom: Alaskan sunsets are spectacular.

shots of the big horned sheep, which had aroused much interest. "You might be surprised if I should tell you the time I spent in climbing over those rocky piles to get near them," he replied.

"Just one more bit," he added. "It has taken me seven years to acquire it, and of course I may be different from the average, but I'll give it to you anyway. If you are constituted as I am don't try to manage a movie camera and a still camera at the same time. Stick to one or the other. Paraphrasing the old English voter's slogan, 'One camera to one man.'

"We carry two Leicas, one for color and one for black-and-white. Mrs. Milotte is so strong a believer in the rule she will not carry more than one kind of Leica. When you are going after game shots you will find you can't bother with too many lenses; you don't have time to change them.

"Regarding fades, I have found it convenient to put in a lot of fades when the spirit moves—they may come in handy; if not, they can always be cut out. Another bit: I have been asked sometimes where I get that peculiar blue in some Alaskan pictures of sky. I don't get it. It's there. It always is following a rainstorm—and as I have said there is much precipitation in Alaska.

"With the opening of the Alcan High-

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## Plan To Put Diversity And Life Into Your Films

By W. G. CAMPBELL BOSCO

To take a clinical case let us suppose that a story calls for a scene which shows a man climbing a flight of stairs. We want to get over the fact that the man is being most cautious not to be heard. We also want to get over the fact that the stairs creak.

When the script is written it is decided that the scene is necessary because (a) it provides proper continuity between the previous and succeeding action, and (b) it is necessary to "plant," or emphasize, the squeaking stair for proper motivation in the next sequence. It is also realized, however, that the scene is of secondary importance to the story and that the opportunity for action or "business" is limited, to the extent that the interest might lag if the scene is not handled with due consideration for picture value in the filming and timing in the editing.

The problem can be resolved by: 1. Medium-shot. Man enters scene, takes off shoes and starts up stairs. 2. Close-up, through bannisters in foreground, of stockinged feet cautiously treading stairs. Foot is placed on stair as though trying it, and then withdrawn, then replaced again. 3. Close-up of man's face registering apprehension. 4. Medium long-shot looking down stairs. Man comes up to and past camera.

Thus, what might have been a dull or uninteresting sequence becomes an opportunity for some appealing angle shots which help "sell" the picture; emphasis is placed where it is needed and when the film is edited it will be possible to cut this sequence so that there will be

a sufficient variety of shots to eliminate the possibility of "interest drag."

Another great advantage that the cineamateur will discover when he undertakes to prepare a script before he starts to shoot is the greater opportunity he will have for using his versatility as a cameraman. As a consequence his pictures as a whole will possess more photographic variety and charm as well as added lucidity and punch in telling their stories. By doing no more, for instance, than to plan the use of varying angles at which to shoot certain scenes will, quite often, lift a reel out of the ordinary.

It is sometimes surprising how easy it is to be monotonous photographically. Scenes that from an action viewpoint have every reason to be stimulating frequently suffer because they have a photographic sameness as endless previous scenes. And in judging the interest-sustaining qualities of a given bit of action, the experience or opinion of a mere spectator is worthless. Things just don't react the same from the screen.

The best illustration of the right and wrong way to make an amateur film that ever came to my attention were some scenes shot of a certain rodeo. Unknown to each other two camera enthusiasts had turned out to get the event on film. Both men got almost exactly the same material. Both reels were photographically excellent as far as exposures and camera handling was concerned. But there the similarity ended.

One man turned in something that

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**W**RITING a script for a home movie is, as we discussed in the last issue, a matter of planning, in more or less detail, what is to be filmed and how. The "what" is determined by the subject of the picture but the "how" is, within certain limits, the responsibility of the cameraman. And this quite apart from whether the photography is adequate or even good from a purely elementary, functional viewpoint.

A motion picture is a story told through a pictorial medium. The pictures, or scenes, that are parts of the film as a whole should each have the eye-arresting appeal that marks the work of the graphic artist, plus the interpretive quality necessary to sustain interest at a maximum and unfold the story expertly. And that's where the script comes in. By planning even the most seemingly unimportant inserts, due consideration can be given to the emphasis they will put in the sequence as a whole; emphasis pictorially or dramatically.



# Are You Getting the Most Out of Your Movies?

By JAMES R. OSWALD

**Y**OU'D be surprised how neglected one of the most important phases of moviemaking really is! Even the supposedly "particular" film-makers often manage to overlook it. After sparing no effort to make a film technically perfect in every respect, they are content to exhibit it to an audience on the most slipshod manner imaginable. In shooting, editing and titling their films, perfection itself may not be quite good enough to please them. But in projection, they seem to have that "anything goes" attitude.

Does *your* audience have to sit and twiddle its thumbs while you search through scores of boxes or tins for that reel of your week-end outing or North Woods vacation last summer? Again while you rewind films and clean the fuzz from the projector gate? Projection may sound like a very insignificant detail to many people, but after all, one's photographic achievements are judged solely by the way the picture appears to the audience on the screen. A little foresight and ingenuity on the part of the projectionist can do much to win this audience appeal.

It is not difficult to acquire a system of short-cuts which will tend to make your program more entertaining. Have the equipment set up before the arrival of your guests, whether a small gathering of friends at home or a large auditorium assembly. The projector, of course, should be on a solid table or stand and your first film properly threaded and focused on the screen before the audience arrives.

A sure sign of carelessness or neglect is that distracting fringe of fuzz which is seen so frequently around the edges of the picture. Prevent this by making sure the lens and gate are spotlessly clean. And it might be well to mention here that it is good practice, too, to carry a spare projection bulb at all times. I once had one burn out, much to my embarrassment, at the very beginning of my program. As I had no spare, that fleeting glimpse of the main title also ended the program!

Now a word about room lights. If you

have no means of fading them gradually (the ideal method) an alternative is suggested which is the next-best thing. Illuminate the room with reading lamps or some other form of indirect illumination instead of conventional overhead lighting, and extinguish the lights one at a time, preferably from a central control point.

The projectionist should always keep a constant watch on the screen while the show is going on. Occasionally, though not very often, the picture may get "out of frame." That is, a portion of two successive frames on the film are visible on the screen at the same time, as is the dividing line between them. When this occurs adjust the framing device on your projector immediately. Don't wait until the reel is half completed!

This is particularly likely to happen with 16mm. film shot with some magazine-type cameras, where scenes from different magazines (or cameras) are intercut. It is likely to happen in 8mm., too, where scenes shot with different cameras are intercut, or follow each other successively.

Focus is another important projection problem. Due to differences in the thickness of the film, there is a noticeable difference in focus for black-and-white film and for color. It's most evident in 8mm., but recurrent enough in 16mm., too, unless the projectionist is on his toes. Often—even in black-and-white—there will be a noticeable focus difference between scenes shot on different *kinds* of film, or even on different batches of the same type of film, for new film, fresh from the processing laboratory, naturally contains more moisture, and is thicker, than older film which has been slowly drying out in the can.

Another point that cannot be emphasized too strongly is the continuity angle. Just as there is continuity in filming movies and in editing them, so also there is continuity in projecting them. You want your program to build to a climax in entertainment and in technical quality, for one thing. So begin, if you can, by projecting your "weakest" pictures,



GOOD AND BAD PRESENTATION: Top, a dignified main title like this gets a film off to a good start. Center, an out-of-frame picture is confusing—and irritates the audience. Bottom, watch for fuzz in the projector aperture!

and build up to the strongest and technically best ones. As a rule (of course there are exceptions!) it's probably best to start your program with any black-and-white pictures you may want to show, and then go to the Kodachrome ones, because unless a black-and-white picture is uncommonly fine, there is nearly always a sort of let-down feeling—an impression of something missing—if you follow color with black-and-white.

For the same reason, do not stop to rewind each film as soon as it is concluded. The show should progress smoothly at all times, with a minimum of interruptions. Rewinding can well wait until after the guests depart. If a separate rewinding unit is available, of course, one reel may be rewound while another is being projected.

In conclusion, it is well to bear in mind that your pictures should always aim to provide the utmost in entertainment. The nearer the projectionist comes to obtaining this objective, the greater the satisfaction both he and the audience will experience. Though the professional touch may be unavoidably lacking because of limited equipment, at least an approach to this perfection can be made. And make no mistake about it, your audience appreciates it.

Remember, your movie making doesn't end when the films are returned from the processing laboratory! **END.**



# STORY IDEAS FOR CHRISTMAS MOVIES

By J. DICKINSON REED

CHRISTMAS movies are going to mean more to all of us this year than ever before. And with the growing scarcity of film, we'll probably show our Yuletide movies around more, even if we're the sort of filmers who ordinarily keep family films strictly reserved for family audiences.

So why not make this year's Christmas movies more than an ordinary, unembellished record of what happened on the holiday? Why not add enough of a thread of story so that your 1942 Christmas movie will be lastingly entertaining, not only to family groups, but to *any* audience, anywhere?

The story doesn't have to be a complex affair of plot and counterplot; quite the reverse, in fact; the simpler it is, the better, so long as it manages to strike what the critics like to call "the human touch." Just make it a simple, believable little story of Christmas in your home—based partly on what actually *did* happen (shot candid-camera fashion while actually taking place) and partly on staged enactments of things which *might* happen, and which give your picture a smooth beginning and ending, and keep the thread of continuity going through it.

In most families, the natural starting-point for planning any Christmas movie will be the children. If you can begin by establishing their thrilled anticipation of the Holiday and Santa's visit, then show their actual enjoyment of the day itself, and end with a little sequence showing them trooping off to bed—sleepy but supremely happy—you'll have a picture that's a sure-fire hit with any audience.

Two of the best Christmas movies ever made used variations of this theme. They were "Santa Visits Elaine," made by John E. Pohl, of Cicero, Illinois, and "Another Happy Day," made by T. Lawrenson, of Dundee, Scotland. Each of them captured first honors in the Home Movie division of one of THE AMERICAN CINEMATOGRAPHER'S International Amateur Movie Contests. And each can suggest usable story-ideas for almost anyone's Christmas movie.

"Santa Visits Elaine" is based on the premise of "be a good child and Santa will bring you ———." At the start, we see Elaine's mama reading her "The Night Before Christmas," and telling her about the rewards of pre-Christmas virtue. In the next sequence, we see Elaine diligently practicing those juvenile virtues—"helping mama," sweeping, ironing, washing dishes, putting her toys away, and so on.

This leads up to the night before Christmas—and Santa's visit, embellished

with some simple camera tricks which make the sequence doubly effective. Santa appears magically in the fireplace. Then, with a wave of his arms, he clears away the furniture from one corner of the room. Another wave, and the presents magically appear and start arranging themselves. Finally, after partaking of the repast Elaine has thoughtfully set out for him, Santa retires to the fireplace and magically disappears.

This camera-magic is the simple kind which can be done by anyone who has both a camera and a tripod. The secret of it is simply that at the moment anything is to vanish or appear, the camera is stopped, the object removed or put into the scene as the case may be, and the camera re-started. Where, as in some scenes, Santa, too, is in the picture, he 'freezes' in position during the time the camera is stopped, and continues his movement as soon as the camera again starts turning.

With this embellishment, the rest of the picture shows in candid-camera fashion just how Elaine—who is a very real little girl—reacted to her presents. And for an ending, she is shown at last toddling slowly upstairs to bed.

Lawrenson's picture uses another variation of this same general theme. Opening as the postman delivers a Christmas-card to young Ian, we soon see Ian (with the help of his mother) laboriously inditing a letter to Father Christmas, reporting he has been a very good boy, and asking for a nice train.

When Ian goes to bed on Christmas eve, we see that the family follows suit, as evidenced by close-ups of such details as latching the door, winding the clock, and so on. Close-ups of the clock's dial show time passing . . . and again we see Santa emerge from the fireplace, and start distributing toys. A touch of humor is added when the cuckoo clock strikes the hour, and startled Santa overturns the fire-irons. Father, hearing the clatter, wakes, looks around and, seeing nothing unusual, goes back to sleep, while Santa finishes his task and returns up the chimney.

In the morning, we see Ian's reaction to his Christmas gifts—centering, of course, on the train, with which both he and his Daddy play delightedly. Lawrenson, like many another, found that toy train an irresistible temptation photographically. While Ian plays with it, his father plays with camera and lights building up a sequence of remarkably effective camera-angles on both the train and its youthful engineer.

A few shots show the father at length continuing to play with the train while



its ostensible owner settles in a corner with a book! This, of course, is a familiar situation in almost any home where Santa has delivered a Christmas train, and one always good for cinematic comedy. It can be developed to almost any extent, and is always a sure-fire laugh.

Lawrenson's picture continues to carry young Ian through his happy day . . . dinner (including plum pudding)—making a snow-man in the front yard, with Daddy's help—tea—and finally the fireworks which are a part of the British Christmas, even as they are in some of our own Southern States. And so, protesting but happy, to bed.

Both of these pictures, it will be seen, were made into interesting little stories by adding to the straightforward record of things which actually happened on Christmas a few introductory, connecting and closing scenes which, while they could have been (and probably were) shot at some other time, might have happened on that particular Christmas and so make the film complete. We've shown these pictures before many an audience—none of which knew Elaine or Ian—and never have we found an audience that didn't pronounce them a hit.

There's no copyright on the idea of making a Christmas movie after these patterns. Of course, you'll have to adapt the basic idea to fit your own family pattern, and your own preferences as a filmer. Lawrenson, for instance, stressed close-ups of his youngster, who can register anticipation and delight better than many a professional actor; Pohl stressed the camera-trickery. You may find some other point to stress in your picture—perhaps the presence of a father, uncle or big brother on leave from the Army, or the timely business of having a happy Christmas in spite of rationing, shortages and dim-outs. But if you make this year's Christmas epic a simple little story as well as a family record, you'll find you have a picture which brings enjoyment not only to the family, but to outside audiences as well. **END.**



# AMONG THE MOVIE CLUBS

WITH gasoline rationing coming on in previously unrationed parts of the country, and rationing or restrictions on film, lamps and other moviemaking necessities, we've heard that some clubs are considering disbanding "for duration." As we see it, there's no need of that. Of course filming opportunities are going to be restricted by wartime curtailments—but there will be no restrictions on a Club's opportunities for service and fellowship. Indeed, the amateur movie-maker has a priceless opportunity to serve his country and his community today, and he can emerge from this war a more useful citizen than he has bothered to be before. Some clubs, like the Long Beach Cinema Club, have been making Civil Defense films for their communities, and using their films and projectors for entertaining isolated Army posts. Others, like the Syracuse Movie Makers, have taken over the major job of providing entertainment for a big Army camp. These may seem to be exceptional circumstances: but every club, anywhere, will find opportunities—constructive projects to keep their members together and active in a useful way—if they'll only look for them! The Editor.

## 8-16's Elect

Annual election of the Philadelphia 8-16 Movie Club put William Bornmann into the President's chair, with George Burnwood as Vice President, and Philip Oetzel re-elected Treasurer. A tie in the voting for Secretary resulted in a run-off vote in which John Henrick won over Mrs. Helen Bornmann. Ben Chesler, Leonard Bauer, Jr., and Walter Bracken were elected directors.

Screen fare included some spectacular Kodachrome films by Vernon Lunt of the Utah Cine Arts Club; 400 feet of 8mm. rodeo shots sent by O. Walter Prioi, of Everett, Washington, and a demonstration of the Macbeth illuminometer.

LEON MERROW.

## "Rockies" in Washington

The November meeting of the Washington Society of Amateur Cinematographers was treated to a special Kodachrome production "Right-time in the Rockies" by William Knepel, and a talk on lights and lighting, together with the usual question-and-answer session.

JOHN T. CHEDESTER,  
President.

## L. A. 8's Elect

The November meeting of the Los Angeles 8mm. Club was featured by the election of officers for 1943. Chosen for President was Fred Evans, with Irwin Dietz as Vice-President, Mrs. Louise Arbogast as Secretary, and Adolf Apel as Treasurer.

## Films for Exchange

"All These We Defend," documentary, 400 ft., 16mm., silent, black-and-white, made by Arthur Tucker. This film portrays the Bill of Rights and the Constitution, what they stand for, and their defense in the present war. Lapdissolves, animations and stock-shots from newsreels are used to make the film thoroughly modern in technique and treatment.

"Finger Lakes," travelogue, 400 ft., 16mm., silent, black-and-white and Kodachrome, made by Arthur Tucker. Excellent photography shows the scenic beauty of the Central New York Finger Lakes district.

"Fish Hatchery," documentary, 400 ft., 16mm., black-and-white, silent, made by Leo Cullen. Shows the netting, stripping, artificial fertilization and hatching of carp. For general showing as well as to audiences interested in fish and game conservation.

"The Toothache" and "Movie Magic," two 16mm. black-and-white comedy featurettes mounted together on 400-ft. reel. Illustrate the uses of stop-motion, reverse-motion, and similar simple tricks which can be done with any amateur camera.

The above films are available through the Syracuse Movie Makers' Association, Lisle D. Conway, President, 100 Trinity Place, Syracuse, N. Y. An 8mm. list is in preparation.

"Indianapolis Amateur Cine Club—1942," 50 ft., 16mm. sound-on-film. This film is a cleverly-made introduction to the officers and members of the club, intended specifically for circulation among other clubs, to give cinefilmmers in other parts of the country a chance to "meet" their fellow-amateurs in Indianapolis. It's short, but well done and well worth seeing. Available from E. M. Culbertson, 2039 Ruckle St., Indianapolis, Indiana.

## Travel, Titles for MMPC

New York's Metropolitan Motion Picture Club initiated a series of general discussions of movie problems at the Club's November Meeting. Program Chairman Joseph Hollywood screened a short 8mm. film on "Titling for the Eight," and led the discussion that followed. Screen fare included Ernest Miller's "A Day at the Fair" (16mm. Kodachrome); "Vieille France," by Luc Pauvel; "Autumn's Glory," by Leo Heffernan, and "Do It Again Harry," by Herman Bartel.

FRANK E. GUNNELL.

## Sound in Minneapolis

The November meeting of the Minneapolis Cine Club included a talk on continuity by Ray Rieschl, and two films by Carroll Davidson, "The Old Mill Stream" and "Musical Moods," illustrating his specialty of synchronizing home movies and records.

ROME A. RIEBETH.

## Skiing in Los Angeles

The November meeting of the Los Angeles Cinema Club presented a spectacular film by new-member E. E. Olsen, "Skiing in the West." Also shown were two 16mm. sound-films, "Meat and Romance," from the National Livestock and Meat Board, and "For America We Save," from Firestone, dealing respectively with nutrition and tire-conservation. Ace-projectionist Harry Parker projected a series of Kodaslide exposed by Mrs. Mildred Zimmerman.

A. A. ANDERSON,  
President.

## New Home for Philly

The October meeting found the Philadelphia Cinema Club assembled in Westminster Hall, the Club's new home in the Witherspoon Building. Ideally suited to the needs of a movie group, the room is long, with acoustic tile ceiling and a built-in screen.

The guest speaker of the evening was C. G. Bastier who told of his travels and experiences as a professional cinematographer.

Charles James projected his delightful Kodachrome film "In the Vineyard." Picturing Martha's Vineyard as an alluring summer resort, his impressionistic sequences of shadows, doorways, movements of wind and water, serve to weave these scenes into a meaningful unity.

An excellent picturization of the Grand Tetons was shown in a film by our president George Pittman. A well-planned sequence of a travelling car with shots taken from vantage points along the road and through the windshield transports us from one breath-taking view to another. Appropriate musical background augments the entertainment value of this fine film "Over Western Trails."

R. M. Hoot, an ex-officio of the club, seems to have turned professional by showing a film made by him for the DuPont and Philadelphia Electric Companies. This film—"Salvaging Waste Light for Victory"—is a sound-on-film Kodachrome, post-recorded. It shows the highlighting of vital parts of machinery with various-hued paints. This, in combination with proper lighting, increases visibility and production.

FRANCIS M. HIRST,  
Publicity Officer.



## Camera Car

(Continued from Page 514)

fication for acceleration, for instance, was that in intermediate gear it should be able to accelerate from a standing start to a speed of 45 miles per hour within a distance of 500 feet. In practice the car, starting and remaining in *third* gear (next to high in the 4-speed transmission), has proven capable of reaching a speed of 58 miles per hour within 500 feet, and 64 miles per hour in 600 feet. Starting in high gear, a speed of 50 miles an hour was reached at 500 feet, 65 miles per hour at 600 feet, and 80 miles per hour in 900 feet. This ability to start smoothly in a high gear and accelerate rapidly is important, as even the best gear-shifting in any car will produce a momentary change of speed which is detrimental to really satisfactory picture quality.

As an example of riding quality, obtained by the wide front wheel tread and the pivoted spring mounting of the tandem rear axles, a typical 50-foot Los Angeles street with a high center crown and deep side gutter dips was crossed at a speed of 40 miles per hour. There was only a slightly perceptible tendency to rebound over the gutter and crown of the road. A standard 5-passenger car following the camera truck rebounded so violently that the car went almost out of control.

In addition to this sensationally improved performance, the car has many refinements from the strictly photographic viewpoint. A roomy locker behind the cab provides locker-space for carrying three complete motion picture camera outfits and a complete still-camera outfit, with all necessary accessories.

Instead of powering the cameras from batteries carried in the usual battery cases placed on the floors of the camera-platforms, the cameras on this car are powered from batteries built into the truck body and wired to convenient outlet plugs at the front, rear, top and sides of the car.

Low camera-platforms are provided at the front and rear of the truck, an intermediate-level platform deck is available just above the rear wheels, and a high-level position is available atop the cab. Rigid, tubular steel camera-mounts are provided on the front and rear platforms and the rear deck. These mounts, to which any type of standard pan-and-tilt head may be fitted, are extensible and adjustable for leveling off the cameras. As will be seen from the illustrations, either direct or offset heads are provided. The mounts slide from side to side of the platform or deck between metal rails, and are locked into place with special quick-release tie-down locks. While six mounts are normally provided, in emergencies as many as a dozen or more cameras have been mounted on the truck.

Removable safety guard-rails for these various platforms are provided, and

carried inside the cab when not in use. Auxiliary mounts are also provided for microphone booms or booster lights, and provision is made for fitting auxiliary platforms at either side, if necessary, or fitting two-bars behind or in front of the car or on either side. END.

## Miniature Fires

(Continued from Page 521)

plenty of ordinary roofing or paving tar inside your miniature, where it will catch when your gasoline-kerosene spray starts. It will help, too, in getting the wickedly lazy action of a fuel-oil fire if you build your miniature to a rather large scale.

Recently I had to do a shot like this, showing the "scorched earth" dynamiting of an oil field in the orient as the Japs approached. We built our oil tanks surrounded by a ring of raised earth representing the sump that surrounds real oil-storage tanks. But inside, instead of having the bottom of the tank flat on the ground, we raised it a few inches on stilts which, of course, the camera couldn't see, as they were hidden behind an earth embankment. Inside, on a bottom of wire mesh, we put excelsior and waste, impregnated with tar and well doused with the gas-kerosene mixture. This combination gave us a perfect fire, with plenty of smoke; and as the open bottom of the tank was a few inches above the ground, the fire "drew" perfectly.

One of the tanks had to be dynamited and turned over, apparently spilling its contents into the bay, which caught with a sheet of floating flame. We prepared for this by pouring a generous supply of the gasoline-coal-oil mixture onto the surface of the water. Being lighter than water, of course it floated. And how it *did* burn! We did that scene on one of our biggest stages—and though the roof is more than 40 feet above the floor, the roof-beams were charred and blackened by the time the scene was in the bag!

The amateur, by the way, has one decided advantage over the professional in filming miniature fires: he *has* to film them outdoors, by sunlight. Working, as we professionals often have to do, indoors on a stage, with artificial illumination, we have a really nasty problem in balancing our light so that the flames don't overpower the illumination on the rest of the scene. This wouldn't be so hard at normal speeds—but when you get to lighting for speeds running from 180 to 200 frames per second, it becomes quite a problem! Working outdoors, with sunlight, the amateur will get a pretty natural balance, even when he filters down for night-effects. END.

## Explosions

(Continued from Page 511)

grenade, he was to spill off his motor-

cycle at a certain spot. That spot was about two feet to one side of the place my explosion would take place; on the ground, two feet from the blast, he'd be perfectly safe, for the charge was planted so it would shoot up over him. Actually, a man standing six feet away would be in more danger than a man on the ground two feet from the blast!

But this young chap wanted to put on a good show for us. As the other player heaved his grenade I gasped, for our motorcyclist was heading right over the spot where my charge was planted! I managed to delay firing until the motorbike had almost passed the spot; but the blast caught the cycle's rear wheel. The explosion tossed our over-zealous young actor twelve feet into the air and removed his pants very neatly. Luckily, he came down otherwise intact; but he might not have. If he'd followed directions, we'd have gotten just as thrilling a shot, and everyone would have been safe.

That's where studio-wise professional stunt men are invaluable. Through long years of experience, they know almost as well as we do what a given explosion will do. They know when it is safe to stand erect beside a blast and take time to "die" dramatically, and when it is best to crumple quickly to the ground. Best of all, they can take direction. You know what your explosion will do; and if you know you can trust your actors to do their part with equal precision, you can make really spectacular shots in perfect safety. With inexperienced actors, such as you often have in training films, the old diplomat's caution of "No zeal" is the best guide, for a man on the ground, even though he is close to a blast, is safe. And he looks just as dead on the screen, even though he's timed his fall a split second before the explosion, rather than waiting for it to push him down! END.

## Planning for Diversity

(Continued from Page 524)

was tedious to sit through and failed in every way to convey the excitement and drama of the rodeo or do justice to the subject-matter. He shot everything from a monotonous eye-level with the result that all the vitality of his subject was strained out. When he edited the film he hadn't a chance. And even the technically excellent follow-shots he made with his telephoto lens hardly helped to dispel the sense of sameness that pervaded scene after scene.

The other man opened with the same parade and filmed the same events. But with what amazingly different results! First, he filmed general rodeo atmosphere stuff. Then, instead of filming entry after entry in the same events, he took time out to think up a few ideas and made some notes. In effect he wrote a script. Simple and unassuming, but sufficient for the purpose.

Reviewing the list of scenes he had



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already made, and cutting the film in his mind's eye, he made a list of shots he would take. And they were the scenes that made the picture, that lifted it out of the class of stuff that the average cinemateur makes and turned what might have been just another photo-

graphic record of a sporting event to a short-subject that would have been a welcome addition to any theatrical program.

He made shots of small boys standing in open-mouthed admiration; he made another memorable shot of a rather sedate woman trying to catch in her mouth the dripping mustard from a hot-dog; another of spectators in a whole block of seats on their feet, tense with excitement.

Lucky? Yes . . . in a way: he wasn't looking for just those shots but he *was* looking for characteristic atmosphere and crowd shots—and he got them. Then there were close-ups of a bronc's head tugging against the restraining hands behind the gate, of pawing hoofs; of steers and lariats. The cowboys sitting on the corral fence got their footage, too, in both long-shot and close-ups. So did the silver-mounted saddles for which they were competing.

These shots I speak of were taken with every consideration for pictorial value and photographic variety. There were shots framed by heads and Stetsons and corral railings. There were birds-eye shots and worm's-eye shots. The cameraman must have made an awful nuisance of himself—but I suppose he took advantage of the tolerance people have for kids and camera addicts.

When this man edited his film he had plenty to work with. The brief parade sequence that opened the epic was enlivened with cuts of kids and crowds. When action sequences weren't filmed suffi-

ciently well in their entirety or when the action was too short or too long, he had interesting, atmospheric cuts to fall back upon. Nothing new, or original? Certainly not! Only a splendid example of tried and true methods and formulae used to make a picture more entertaining. And movies—whether professional or amateur—will always "pay off" on the amount of entertainment they offer their audiences! **END.**

## Charlie Lang

(Continued from Page 516)

picture was an unimportant little thing called 'Ritz,' starring Betty Bronson. The less said about that picture, the better! I got through it somehow, but not in any fashion to distinguish myself or make the producer happy.

"I went back to Second Camera—and liked it!

"Two or three years later, they gave me another break as First Cameraman. This time I did better—but not too much better. I'd learned a good deal shooting second with some of Paramount's older and more experienced hands, but I still didn't cover myself with glory on the screen. I got by—but by a margin that got slimmer and slimmer all the time.

"Finally I reached a point where I knew that if I didn't do better on my next picture, I'd better get ready to go back to shooting second, or dig out the law books. And I tried to analyze my past work to see if I couldn't find out what was lacking.

"Finally I reached the conclusion that, consciously or otherwise, I'd been imitating what I saw the other cameramen doing too much. I'd approach a scene and try to light it the way I thought Harry Fischbeck or Al Gilks or Vic Milner would do it. Naturally, what I was putting on the screen was a pretty pale imitation of Fischbeck, or Gilks or Milner. It didn't have any real character of its own. And even in the 'B' pictures I was doing, it was a misfit.

"So on this picture—which I was pretty sure was likely to be my last—I decided to forget about what the other fellows might do, and try and photograph it for Charlie Lang. At least, I'd go out on my own mistakes, rather than on the mistakes I'd make trying to copy somebody else's good work!

"Luckily for me, that picture was a melodrama—one that could stand strong pictorial treatment, with 'arty' compositions and rugged effect-lightings. I gave it the works. Where before I would probably have hesitated, and tried to play things on the safe side, this time I went the whole hog on sketchy, dramatic lightings.

"And it clicked!

"Instead of being fired, I got a raise, and a chance at better pictures. I worked for a while with Dorothy Arzner, the celebrated woman director. In one of the pictures, I photographed Ruth Chatterton, who was then Paramount's top star. And she liked the way I made her look on the screen so much that on her

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next picture she asked for me. And when a studio's biggest box-office star asks for a cameraman, she usually gets him. I stayed with her until she left the studio.

"From that time on, things have rolled along fairly well for me. I've gotten my fair share of the studio's best photographic opportunities and, I hope, not done too badly by them. I've never been completely satisfied with any of my pictures, but other folks luckily haven't usually seen all the faults in them that I do.

"But the start of the whole thing was that decision to try and stand on my own feet, photographically, rather than to keep on safely imitating somebody else.

"I think that would be the keynote of any advice I'd give a younger cinematographer today. If my present Operative were to be promoted to a directorship of photography today, I'm sure I'd urge him not to pattern his work after mine a minute longer than was absolutely necessary in getting a good start

on his own. After that, for pete's sake forget there ever was such a person as Charlie Lang: go out and shoot things as you yourself see them, not as you think Charlie Lang or Vic Milner or Joe Doakes would shoot them!

"And above all, if the story will possibly stand it, don't be afraid to go strongly for effect-lightings! They're a sure-fire winner of the average non-photographer's praise (you never saw any cinematographer miss on a mystery or horror picture, did you?) and while you may fail to satisfy yourself on some of the more conventional shots, in details only a cinematographer would notice, if you get in a good sprinkling of really striking effect-lightings and forceful compositions, you'll find the front office, the director and the stars are all likely to pat you on the back as a rising young artist!

"Once you're established that way, and off to a good start, you'll find time enough to take yourself in hand and smooth off those rough spots which only you, as a cameraman, can see. You'll never be completely satisfied, anyway, if you appraise your work with real sincerity. Even if they hand you an Academy 'Oscar' for a picture, you'll still be able to look back on that picture with a bit of a blush and tell yourself, 'Gee, I wish I could do that scene again—I could do it so much better now, I could avoid this mistake I made, or that opportunity I missed!'

"As a matter of fact, I find that looking back over some of my past pictures is helpful in more ways than one. A good look at yesterday's mistakes keeps you from feeling too self-satisfied, and it can often give you very helpful pointers on what to do today, too.

"When I start a picture, of course my first step is to study the script as carefully as possible, and try to visualize clearly what I see in each scene and sequence, and figure out in advance how to get it on the screen. Then, when I'm sure my mental picture and that of the director, the producer, and others coordinate, I start casting back in my memory for some other picture I've done in which I've used a similar treatment.

"When I find it, I get a print of that picture and study it on the screen. That way, I can see objectively just how that

treatment worked out in practice. If I see something good—something that can be adapted to my new assignment—I know precisely what I did to get that effect, and what I must do to get it under today's conditions.

"And I also see the opportunities I missed before. If there's any parallel in the new picture, I at least have advance warning of them... a tip-off on what I should do, even if I didn't do it before. I'll probably make plenty of mistakes, and miss plenty of opportunities: but at least they'll be different ones!

"I've often thought it would be interesting to have an opportunity to re-do with today's materials and methods some picture I'd photographed in the past. Even in black-and-white, with today's advances in film and lighting, and particularly putting today's ideas in cinematographic treatment to work, it would give an entirely different result. And using Technicolor would be like playing a familiar piece with a symphony orchestra in place of a single, tinny piano—!

"And while speaking of advances, don't forget the changes that have taken place in the camera crew itself. Today's Operatives and Assistants are infinitely more important to the director of photography and to the picture than were the Second Cameramen and Assistants of yesterday. They used to be more or less cogs in a machine... and cogs you could do without, in a pinch. But today, the director of photography can stand or fall on the performance of his crew. Of course, he creates the lightings and plans the compositions: but if the Operative doesn't work in perfect coordination with him, they're not likely to reach the screen intact. If the Assistant doesn't do his work in following focus perfectly... well, nobody can tell about it until the rushes are screened the next day! And the blame falls more on the Chief's head than on the subordinate's. Perfect team-work is essential. The director of photography must have confidence that his operative crew has the ability to per-

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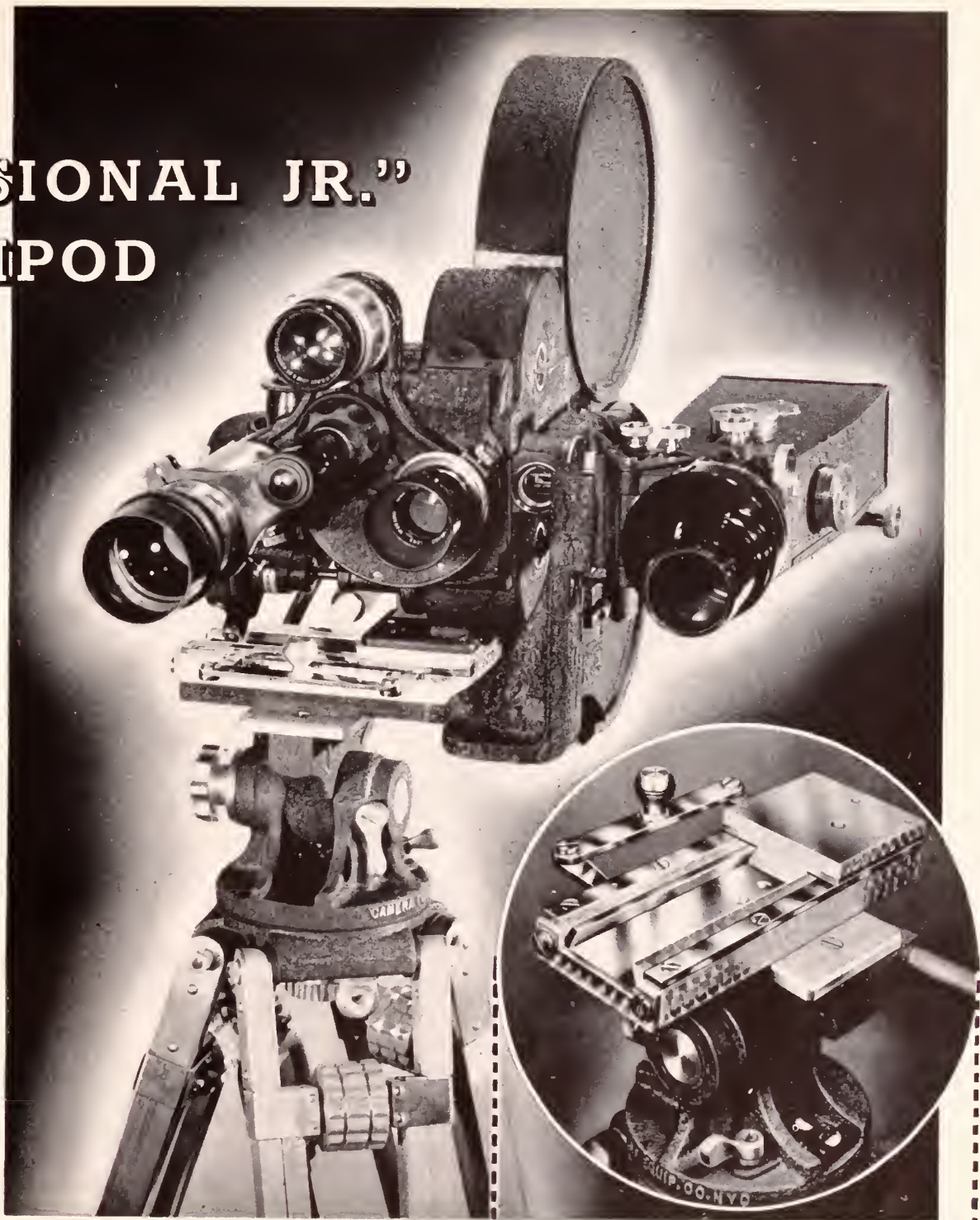


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★ The Shiftover has a "snap-bracket" which prevents the camera from sliding off the dovetail base—and is provided with dowel pins which position it to top-plates of tripods having  $\frac{3}{8}$  or  $\frac{1}{4}$ -20 camera fastening screw.

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form whatever is required, and the integrity to admit immediately if they've missed a shot. They, on their part, must have confidence that their chief won't ask the impossible, and that he'll back them up when they need it.

"That's why I've so little patience with some cinematographers who seem to feel they've got to be as arbitrary as a Prussian major with their crews. Of course some sort of discipline is often necessary if we're to get things done; but it should be the discipline that grows out of mutual respect and confidence—the sort that builds up democratic teamwork on the set in just the same way it does in the Army or on a sports team. And I think most of us, if we compare what our crews are doing with what we did when we were working as Second or Assistant cameramen, will have to respect them for doing a much more intricate job, under more difficult conditions—and probably doing it much better than we would have!" **END.**

## Without Photofloods

(Continued from Page 520)

more directional light, and which of course can always be softened to any desired extent by placing diffusing screens over the lamp.

The standard Mazda lamps we've been talking about are available in *both* inside-frosted and clear globes; the projection lamps, of course, only in clear bulbs, and the "R-type" reflector spots and floods only with inside-frosted globes. By combining these lamps, with

and without added diffusion, you'll find you can achieve a very much wider range of lighting effects than you ever could with the frosted Photofloods alone.

Where you want your lightings essentially soft—as in glamorizing women—you can use frosted-bulb lamps, supplemented, perhaps, with added diffusion.

But where you want more strength and character in your lightings—as in photographing men for virile effects—use undiffused, clear-bulb lamps, and you'll get stronger, more rugged lightings than ever before. You'll get more sharply-defined shadow effects, too, when you want them, for a clear-globed lamp gives a much more directional beam than is possible with any frosted globe.

And when, as in most cases, you want to combine these effects, you can do so if you have both clear and frosted globes to put into your lighting units. You can use the clear-bulb lamps for strong key-lighting or for the highlight side of your lighting, and use the softer frosted-globe lamps to fill in the shadow sides. And you can illuminate the backgrounds with the "R-type" reflector lamps—especially the flood types—mounted in a simple socket on a wooden base, and concealed behind furniture, etc., to light up the back walls.

All told, while we'll all miss the Photoflood, we'll find we can manage adequately without it—and in the process learn things about balancing different types of light-sources which will stand us in good stead when the Photoflood is once more available! **END.**

## America's Burma Road

(Continued from Page 523)

way things are going to happen in Alaska. From the Canadian border to Fairbanks is 1671 miles. This section is already in operation ahead of schedule. Secretary of War Stimson says supplies are moving north over the road to troops. When this war is won, thousands of camera-toting motorists are going to follow over the same route. Twenty or twenty-five years ago only the hardest adventurers even thought of driving from our big cities to vacation in Yellowstone or the Grand Canyon; today it's a commonplace. Today, the thought of 'driving to Alaska' sounds adventurous and hints at hardships; tomorrow, a vacation drive up 'America's Burma Road' will be as much a commonplace as a drive to Yosemite—but it will take the picture-maker to a whole world of photographically virgin territory!" **END.**



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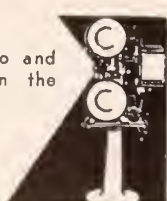
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## Script Breakdowns

(Continued from Page 513)

training film producer's usual lack of Hollywood-trained aides.

Obviously, if the detailed information on all the requirements of each single scene is placed this way in standard form on a single sheet of paper, the scene forms can be re-grouped either as a card-index or in a loose-leaf binder, in whatever sequence will provide for the most efficient shooting. Without the necessity of thumbing through page after page of script (and usually finding, too late, that you've overlooked one scene!) all the scenes to be shot on a given set, or a given location, can be grouped together, planned together and filmed together. As each scene is successfully put on film, its accompanying scene form sheet, duly annotated, can be moved into another place in the file or binder, and so on until all that group of scenes are filmed.

The forms are designed to eliminate the possibility of making errors in costuming, continuity, action, dialog, etc., which so frequently cause retakes even when a thoroughly experienced script-clerk is on the set. Naturally, they can also help the film-editor in putting the film into shape for release-printing.

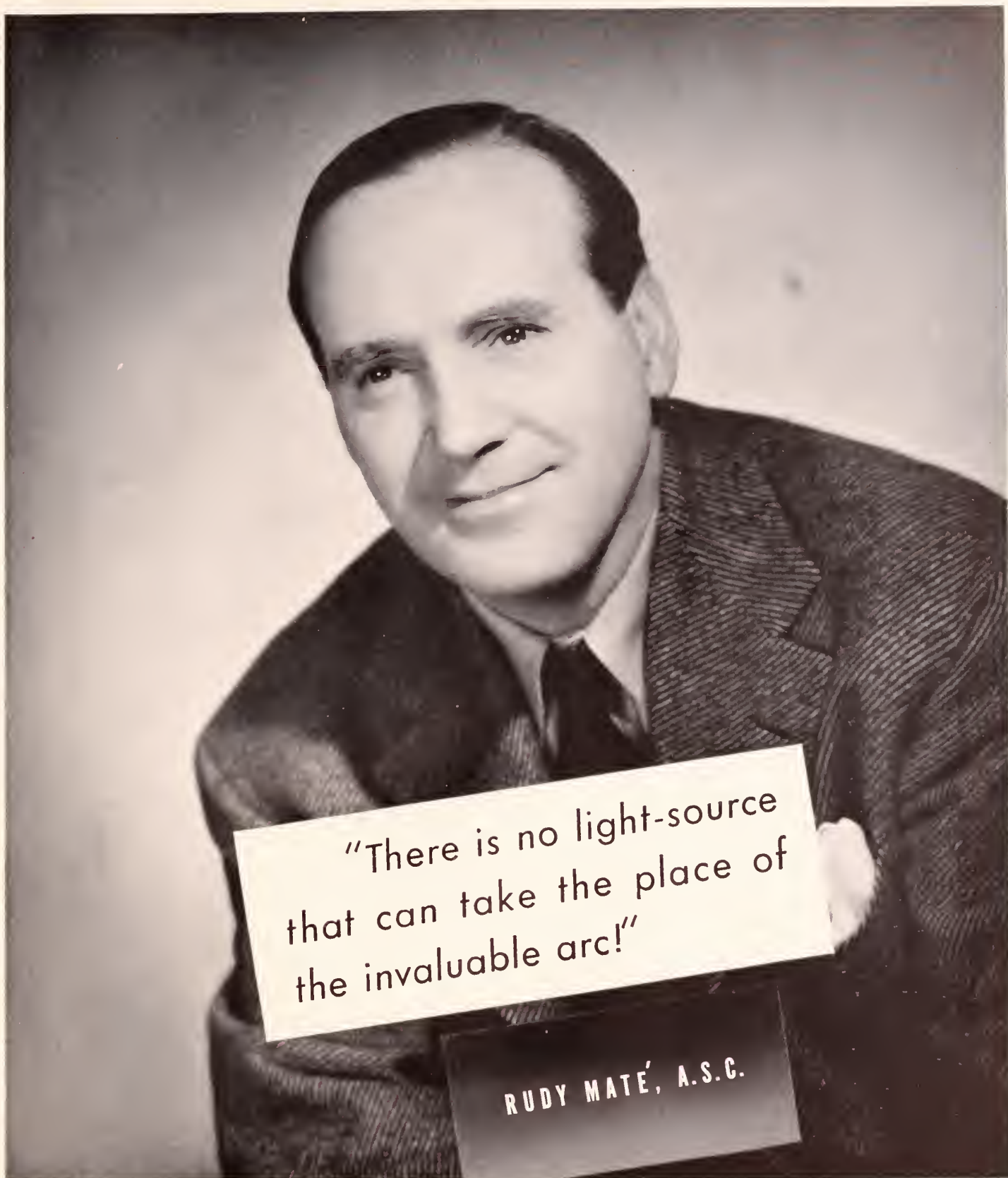
By carefully planning the continuity of action, the camera-angles, transitions, and the like, a great deal of time, money and film can be saved. These savings can be notably enhanced if rough sketches of the scene can be added to the written data on the scene form. Even a simple plan view of the set or location, with doors, windows, furniture, etc., indicated, will aid in both the pre-production planning and the actual shooting. A plan like this, with the set sketched fairly closely to scale, and with the basic camera-angles and set-ups indicated, should if possible be included in the file or binder before each group of scene forms dealing with a given set or location.

If it is at all possible, a rough sketch of the content and composition of each scene should be included on each scene form. The director, the cinematographer, and in the case of technical training films, the technical or educational consultants, should collaborate in preparing these sketches which, naturally, do not need to be either detailed or artistically perfect, but merely enough to show approximately what will be on the screen in that particular scene, and the basic directions of movement.

Before an inch of film is exposed, these sketches and the accompanying data on the scene forms should show how the completed film will fit together, and how thoroughly it will tell its story. Thus gaps in continuity can more easily be detected and remedied.

When the film is actually in production, the sketches should save time in making camera set-ups, and should prob-





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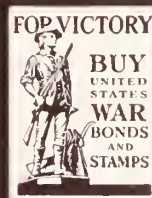
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ably conserve film, as well, since they should eliminate the making of many unnecessary angles and protection-shots.

The sketches together with the scene form data as to action and angle, and the basic set-plan, should also make it easier to plan the camera-treatment of scenes made on location in accordance with the physical requirements of the location, and to plan the layout and dimensions of studio sets to suit the practical needs of the camera.

The use of set-plans and scene-

sketches has already been advocated for both the professional and the amateur in many articles in this and other publications. It has, moreover, been proven in practice by a number of Hollywood's most successful studios and individual creative workers.

Its use in making today's essential technical training films should pay even greater dividends. So, too, should the use of the scene form system advocated by the writer. For while in making today's training films—civilian or military

—the factor of profits and cost may be overlooked, we cannot overlook the fact that these films are needed urgently, quickly, and above all, in the most effective form possible if they are to play their full part in the all-out effort for Victory. And careful pre-production preparation is the first and most essential step toward putting them efficiently and effectively on the screen. END.

## Navy Films

(Continued from Page 513)

film, or a neglected tactical detail, will be more harmful than beneficial, for it may impart erroneous impressions to the thousands of recruits before whom it will eventually be shown. Students are taught to regard training films as a form of gospel, the learning from which may be a deciding factor on which their lives depend.

Thousands of recruits attending one showing of a training film will derive in a few minutes more benefit than they could receive from the full energies of hundreds of instructors over a period of weeks. Deck-space, time and equipment limit the number of lectures which can be given during a day aboard ship. For an instructor to impart his knowledge to a student, he must have a complete understanding of the subject being taught, be capable of instilling confidence and enthusiasm in the men, and he must know how to teach.

Different instructors are subject to varying viewpoints, and have diverse methods of teaching a common technique. This tends to have a distracting effect upon the students in general when taught by this method, and when the groups are placed in an "employment status" at the completion of their training, a wide range of opinion will result.

The training film, as a universal guide, eliminates these differences, for the explanations are clear, well presented and, with few exceptions, require no further clarification. A staff of experts edit each film before it is released and every precaution is taken to avoid technical inaccuracies. A modern training film is a medium which is probably the closest to perfection for training purposes as can possibly be provided, and is an almost revolutionary advance over the primitive blackboard-chalk-instructor method. It renders obsolete the proverbial stand-by "that ain't the way I learned it."

The technique of teaching the operation of one of the ships' guns, for example, can be witnessed by thousands at one sitting, depending only on the capacity of the theater. It strips the weapon down to the base, explains each vital part, and in inverse order, by an unseen hand, reconstructs the weapon in correct technical sequence, carefully explaining each operating part.

Superimposed arrows put in by double exposure, clearly locate the portion being described, while an authoritative voice



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from the sound-track breaks the movements into detail, accentuating the value of each part to the operating efficiency of the gun as a whole.

Prior to the attack on Pearl Harbor, the U. S. Navy had realized the value of training films, and with uncanny foresight, unleashed a program of preparing hundreds of her men for eventual photographic assignments with ships of the Fleet. Through the altruistic and patriotic efforts of the March of Time Studios in New York City, enlisted men from the armed forces, including a large representation from the Navy and Marine Corps, participated in an intensive six months' course in movie-making. This course in modern Pictorial Journalism, under the direction of Louis de Rochemont, March of Time producer, prepares young recruits to record the far-flung encounters of this war, wherever the necessity arises.

Under the direct supervision of D. Y. Bradshaw, one of March of Time's most versatile editors, in cooperation with the organization's regular technical staff, the recruits are given intensive training not only in the use of motion picture technique, but also in the March of Time's inimitable technique of story presentation, enhanced by the practical knowledge obtained from field trips with regular crews, provide the students with a well-rounded knowledge of all phases of photography.

As the class is brought to a point where it can undertake missions in separate groups, experimental assignments are given on various subjects in and around New York. After completion of the field work, the material is brought through the cutting stage, the sound-tracks are dubbed in, and the narration written—all in the March of Time's regular laboratories and under the supervision of March of Time's technicians.

To defray the costs of living in somewhat of a "civilian status," the enlisted men are paid regular Navy subsistence allowances in addition to their regular pay. During field assignments, March of Time provides the difference between their expense allowance and that of regular crews. The cost of maintaining this elaborate set-up is sustained completely by the March of Time, which in return derives only the benefits of improved film releases by the service for public exhibition and use—and the satisfaction that they are contributing a

potent weapon to the defense of our country.

Increased demands for skilled personnel to perform hundreds of photographic missions have limited the existing pool of camera crews. The services of each man are constantly at a premium, and even before the completion of each mission, another is waiting.

Time, too, is at a premium—tomorrow means a new mission, a new subject. Their work is never finished, for new problems arise daily, and their task is to record the events surrounding them—to remove the burn from mistakes, to magnify errors, correct them, and to do it rapidly. They must provide the novice entering the Navy with a path of experience which oftentimes was obtained with the lives of those who came before him.

To coordinate the expansion of the Navy's need for Training Films, a Photographic Board was actuated to investigate the existing facilities in the commercial field for producing these films. This method made available the experience of years of movie-making and eliminated the necessity of training new crews for this specific purpose. Time was the all-important and deciding factor in this arrangement, and this seems to be a sound method for solving it.

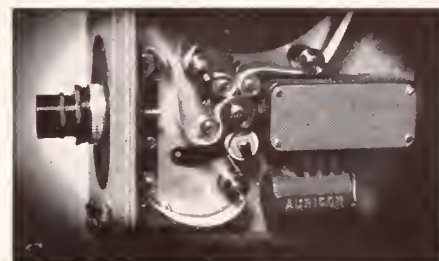
Contracts were approved and now highly efficient civilian motion picture plants with modern equipment, animation artists, and other technical experts are engaged in turning out training films in mass-production. One company has turned out five color films, complete with sound, on the very important subject of First Aid. These films have been turned out in the remarkably short period of 12 weeks. Others are striving to meet records such as this and in very short order will be doing their parts with equal rapidity.

Every important phase of Naval warfare will eventually be covered with celluloid instructors. These commercial companies are under contract with the Navy Department and have been assigned technical advisors to assist them in this work. The Navy Department has placed the supervision of this activity in the hands of the Photographic Section of the Bureau of Aeronautics.

Subjects of a restricted nature are made entirely by Naval personnel directly under the Bureau of Aeronautics Photographic Section. Lieutenant Thomas

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Orchard of the March of Time, now serving with the Navy, is the officer in charge of the Training Film Unit of the Bureau of Aeronautics. Under Lt. Orchard three crews of enlisted men with a junior officer-director handle these specialized productions. As in the case of films made by commercial producers, a technical advisor in the particular field the film is to cover is assigned to render expert technical supervision.

Although the training film is never intended as a substitute for practical application, it is an important aid for instructional use as it creates in the mind of every man a vivid nucleus of what he may expect to encounter in actual operations—a priceless preview into the future. It standardizes instruction, and materially reduces the elements of time and suffering which practical experience so often exacts.

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They have made possible a policy which will accelerate the production of training films during a time when they are most sorely needed, and have helped build an organization of experienced personnel to accomplish this work. They, with the tools of their profession, have acquitted themselves admirably in their services to their Country. This group of patriotic citizen-sailors have solidly cemented another milestone in the continued advancement of naval photography which will be carried on, even after the star of tranquility sees fit to reappear. **END.**

### Where Do I Go . . . ?

(Continued from Page 512)

skipper kept back one male calf in order that he and the crew might eat fresh beef on the day the Armistice was signed.

When I caught up with the ship the calf was a bloody great bull. But not an ordinary bull, for he had never seen a Greek field or a cow, and so we called him "Ferdinand the Sissy." He ate bully beef and ration biscuits, and for a lump of sugar would perform all sorts of antics.

At Haifa I boarded a train for Cairo and found myself sharing a carriage with a war correspondent who had just left Baghdad because "nothing ever happens here, old man" . . . During our journey news came through that we had invaded Iran. Was the war correspondent mad! The things he was going to do to Public Relations . . .

At Cairo I was ordered to Singapore by air, taking enough film with me to last a year. It only took me a week to get ready. Incidentally it was now that I caught up with my own equipment which had come round by way of the Cape to Cairo.

I examined it with reverence. A Model "E" Newman Sinclair with a lens of individual panels and all kinds of fine devices, also a turret Eyemo with a rangefinder and a patent device to slip gelly filters behind the lens in the body of the camera.

The night before I left I went into Tommy's Bar and met the New Zealand Army bunch of cameramen—MacIntyre and Elias, two of the nicest chaps in the business. If they ever come to Blighty I hope ACT will help them all they can.

Early next morning I left for Singa-

pore by Imperial Airways flying-boat, touching down at Tiberias, whence I made a short rubberneck tour to Nazareth, which was completely spoilt for me by the horde of beggars and general commercialization. In every respect it compared very unfavorably with the Pyramids, where the guides have some kind of trade union and make it impossible for anybody else to rob you, except themselves, which of course they do very expertly—but one feels it's worth it.

From Tiberias our course was via Bahrein (the hottest place this side of Hell), Karachi, Calcutta, Rangoon and finally Singapore. At each of these places we stopped one night, and so to go halfway round the world took me six days. At Rangoon I visited the famous Shwe Dagon Pagoda—a wonderful Buddhist place of worship entirely covered with gold leaf plates. I noticed how nearly everybody, including the women, was smoking Burma cheroots. A few months later when I was a refugee passing through Calcutta I saw an enormous huddle of refugees, some of whom were also smoking treasured cheroots, and by this I knew they were from Burma. Only this time my paramount feeling was not that of memorizing a shot for some future film but of gladness that these poor people had eluded the Japs.

About Singapore and the battle of Malaya I find it very difficult to write anything at all. Anything from me would be foolish on the military angle, even if I were allowed to print it, which as an Army officer I am not—and from the civil end it seems very unkind to those who had relatives there. There are lots of things which I can't understand about Singapore. But whatever people said about the military, and especially about the civil side of the Malayan campaign, can only apply before the war started.

I saw with my own eyes how the Chinese population of Singapore dealt with fires in a manner which would have done credit to the A.F.S. How the much

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maligned whiskey-swilling planters acted as guides to the military, right under fire. How the police worked like devils to get rid of vast quantities of rice to the Malays and locals so that they could beat it into the jungle. How British Tommies worked as coolies in Singapore Docks unloading ships. And a thousand and one other fine things.

I remember a poor seventy-year-old Tamil laborer. In an air-raid he had one leg cut like mincemeat and was slowly dying, when another flight of Jap bombers came over. The dying man urged the one man of our party who spoke Tamil to run away as he too might get hurt.

On Christmas Day I got mixed up with a bomb and the blast dislocated my spine in two places. Whilst in the ambulance a wounded Japanese pilot was brought in—I was asked if I objected and was feeling too miserable to think of it. The ambulance chap gave me and the Jap a cigarette apiece from his own pocket. They straightened me out in a fortnight, for which I was very thankful. To me, spinal trouble brought visions of the Star and Garter.

Handling our stills negatives in Singapore was John Drake, whose photographic education commenced at Harrow (Kodak's, not the school). He is now in Ceylon handling the Public Relations stuff there.

The night the Japs landed on Singapore Island was made into a hell for them by our guns, which fired for sixteen hours. I'm told there was much more noise than on those famous first few nights in the London blitz when our barrage opened up. Once the Japs were established on the island things became pretty grim. Among the civilians were some astonishing examples of complacency and also of apparent indifference. Tuesday afternoon the Cable Office was put out of order by a bomb or shell, so it was decided that Public Relations, whose first duty is the safety of war correspondents and the despatch of their messages, should leave. I was sent also because of my cameras and because I hadn't been able to despatch anything for the last week owing to lack of transport.

So Tuesday night we boarded a very small naval patrol vessel and set sail. Our course took us right through the middle of a Japanese landing party in

small boats—why they left us alone was a mystery. Shells were flying around us and parts of the island were burning. Once we sailed so close to a battery of enormous guns that each time they went off the blast was like a rock hitting us.

Each day thereafter we tied up alongside tiny islands, on the theory that Jap aircraft would believe us to be derelict, which is apparently what they did think. Everyone lay hidden and as still as a mouse. The planes would circle around us and then fly away.

We arrived in Batavia on the fifteenth—a Sunday—to learn that Singapore had fallen. After one night there we were ordered to Rangoon. So we embarked on a fine Dutch liner going west, with about a million other people, and departed in the midst of a tropical rainstorm down the Sundra Straits. But for this rainstorm we should probably have been torpedoed, as other ships were.

There were so many of us on this ship that we had to queue up for our meals and do our own washing up. To those of us in the army this was no hardship, but some people wouldn't eat simply because the meat and rice was put into their plate by the extremely dirty hands of a Malay cook. I saw the funny side of this and got lots of amusement watching these people who were accustomed to doing nothing at all washing dishes or sleeping on straw mattresses in the hold next to seasick Chinese. How they grumbled under their breath! To grumble out loud was to incur an extra turn of sweeping the decks.

In Ceylon we were told to disembark and await further orders. After about a month we were told that the War Office had seen fit to transfer us to the Indian Army. We were to go to Calcutta and await further orders. Sid Bonnet was with me from Singapore and he elected to come to Calcutta with me.

Our first night in Calcutta was spent in seeing a preview of some MOI shorts, and with them was showing *Wings Over Everest* which Sid Bonnet had shot. We were taken to live at the house of the local big shot, who used to work at B.I.P. Export and is now boss of a firm called British Distributors—name of George Reardon—and what with me being an old B.I. Per and Sid shooting this Everest film we were right in.

After three weeks of complete idleness and luxury I was ordered off to the Manipur Road in Assam to assist the war correspondents there. I found this very interesting work and Assam a very interesting place. After a month I was ordered to Delhi, where I was attached to His Royal Highness the Duke of Gloucester as official cinematographer in India. We fly all over India (literally) and I shoot so much film that Kodak's must think I'm a shareholder! At the time of writing I'm half-way through the tour and getting very fat through eating too much regal food—it's a miracle to me how Royalty keep any figure at all! END.



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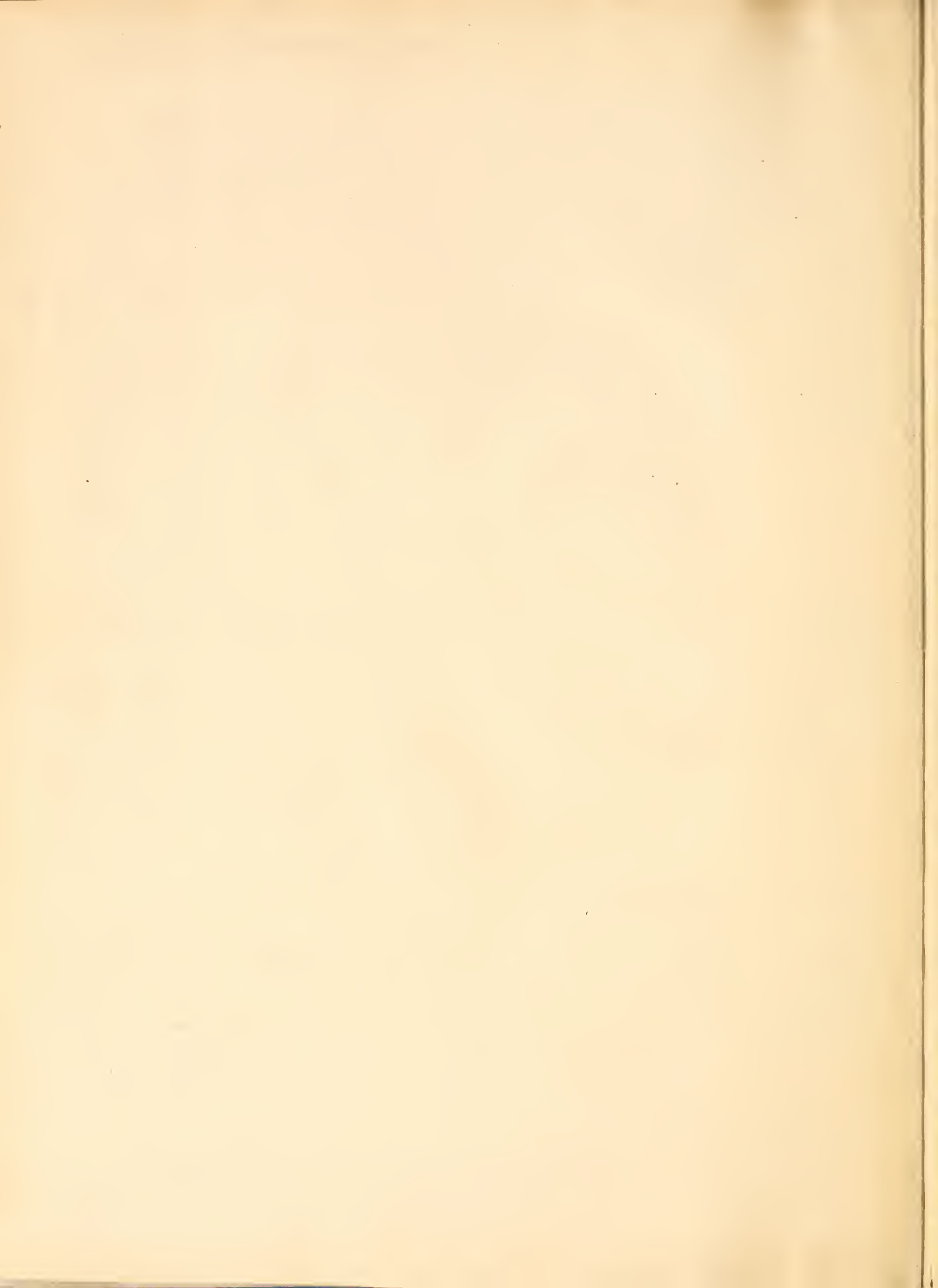
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